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ABSTRACT

This document consists of the 12 monthly issues of this research newsletter for 2001. The newsletter's purpose is to inform those who formulate, fund, and administer public policy and programs about research on the condition of and influences that affect postsecondary education opportunity for all Americans. Main topics for the issues are: (1) "Interstate Migration of College Undergraduates"; (2) "Where the Guys Are Not: The Growing Gender Imbalance in College Degrees Awarded"; (3) "Just and Efficient College Finance"; (4) "Trends in College Participation by Family Income 1970 to 1999"; (5) "College Continuation Rates for Recent High School Graduates 1959 to 2000"; (6) "High School Graduation Trends and Patterns 1981 to 2000"; (7) "College Participation by Gender Age 18 to 24, 1967 to 2000"; (8) "Freshman-to-Sophomore Persistence 1983 to 2001"; (9) "Freshman Point-of-Entry into Higher Education: Public or Private, Two-Year or Four-Year by State 1991 to 2000"; (10) "Family Income and Higher Education Opportunity 1970 to 2000"; (11) "College Enrollment by Age 1950 to 2000"; and (12) "College Participation by Family Income, Gender and Race/Ethnicity for Dependent 18 to 24 Year Olds 1996 to 2000." (EV)

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Postsecondary Education
OPPORTUNITY

The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 103 www.postsecondary.org January 2001

Interstate Migration of College Undergraduates

Students speak loudly with their feet. Where they choose to attend college reflects their perceptions of colleges addressing their needs and desires.

When students from one state bypass public and private colleges in their home state to enroll in an institution in another state, they are making one or more of several statements:

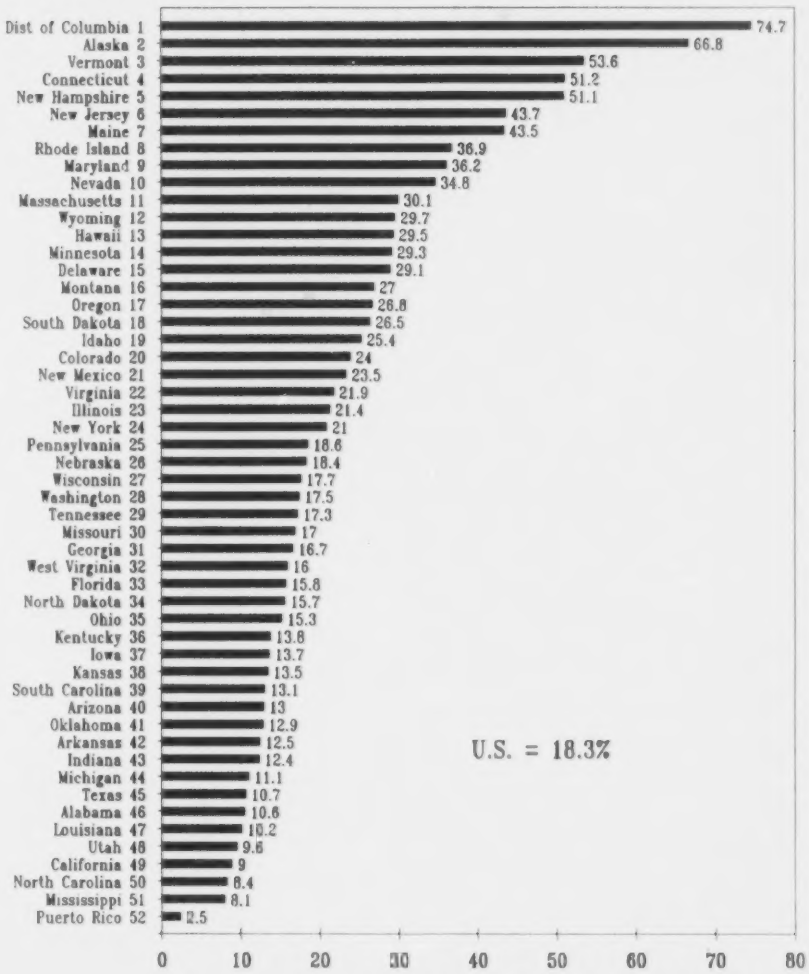
- I want to get away from home.
- This college offers something I could not find in colleges back in my home state.
- I can afford a more expensive college than those available closer to home.

Each year about one out of five college freshmen enrolls at an out-of-state college or university. They bypass less expensive, state-subsidized colleges and universities to attend a more expensive institution in another state. In leap-frogging these institutions they are both seeking something farther away from home and they are able to pay for the more distant educational opportunity.

Here we examine newly available data from a variety of sources to look at geographic effects on college attendance patterns. These data are collected and reported by the National Center for Education Statistics, U.S. Department of Education and the UCLA Higher Education Research Institute.

Mainly we are interested in students leaving their home state to attend college in another state. Those that do so give up large state subsidies to their education available at public colleges and universities in their home state. Many also give up state student financial aid benefits that are rarely portable across state lines. Even Pell Grant recipients, from the bottom half of the family income distribution, often leave their home state and enroll somewhere else. Apparently these undergraduate students are seeking--and finding--a higher educational opportunity at a more distant location

Emigration Rate for State Resident Freshmen, 1998



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that they could not find closer to home. (Institutions and states: Are you listening?)

The Data

Information to study distance effects on college attendance patterns comes from three primary sources.

IPEDS Residence and Migration Survey. Once every two years the fall IPEDS survey asks each higher education institution to identify the state of residence of its entering freshmen students. These data are gathered, tabulation and reported by the National Center for Education Statistics. The data appear in the *Digest of Education Statistics*, and are available for downloading from the NCES website at nces.ed.gov as Ed Tabs.

The format for the current survey was set with the 1986 IPEDS survey. Data from this survey were reported for 1986, 1988, 1992, 1994 and 1996. The 1990 data were not released due to incomplete state reporting. Each year incomplete reports from states diminish the value of these data. In the 1998 reports, **Minnesota, Puerto Rico** and **California** submitted sloppy and incomplete state reports with missing residency data from many of their schools. Thus data for these states is most suspect. Other states with less serious reporting problems were **Florida, Colorado, Wisconsin, Texas** and **Ohio**.

The 1998 data have not been published, but were tabulated for OPPORTUNITY by Sam Barbett at NCES and are used here. (We will copy and ship our copy from NCES at cost on request.)

The data analyzed and reported here are limited to freshmen who graduated from high school during the previous 12 months. We believe that these data most accurately reflect state of residence, and that these freshmen are the ones most likely to complete bachelor's degrees.

Title IV/Federal Pell Grant Program End of Year Report. Each year the U.S. Department of Education's Office of Postsecondary Education (OPE) publishes an annual data report on the Pell Grant program. Among the many data descriptions of the program are two tables that provide state-level data on Pell Grant recipients. The first table reports the number of Pell Grant recipients and dollars received by state and control of institution attended. The second table presents similar data by the state of residence of the Pell Grant recipient. The difference between these two tables represents net interstate migration of Pell Grant recipients and the dollar value of the awards they received.

These annual reports are available for downloading from the OPE program data webpage at:

http://www.ed.gov/offices/OPE/Data/index.html

The data have been reported since 1976-77.

We have tabulated the published data in a large Excel workbook available for viewing on our website at www.postsecondary.org under the Spreadsheets button. Data published in the OPE report have been entered on state worksheets within this workbook to facilitate understanding of trends and patterns in the data in each state. Our tabulation of these data for each state facilitate understanding net migration by institutional control, and they illustrate the net flow of Pell Grant dollars to or from each state that follow Pell Grant recipients.

Freshman survey. Each year since 1966 a large national sample of first-time, full-time American college freshmen have been surveyed to gather

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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extensive student and parent demographic data, high school achievements and experiences, college choice/application/matriculation, degree/major/career plans, college experiences and expectations, attitudes and values, and financial aid.

Among the questions asked of college freshmen is one asking about the distance from home to college attended. This information has been examined over time from published reports and has been cross-tabulated by the Higher Education Research Institute at UCLA for OPPORTUNITY with other student responses to add important insight into geographic effects on student enrollment behavior.

Distance to College

Geographic distance has many dimensions relevant to higher educational opportunity:

- Economic: distance involves travel time and costs.
- Parental reach or control: the adolescent need to escape parental domination.
- Information: we know more about that which is conveniently nearby than we do about places farther away that we visit less frequently.

In different ways each dimension influences where students enroll in college.

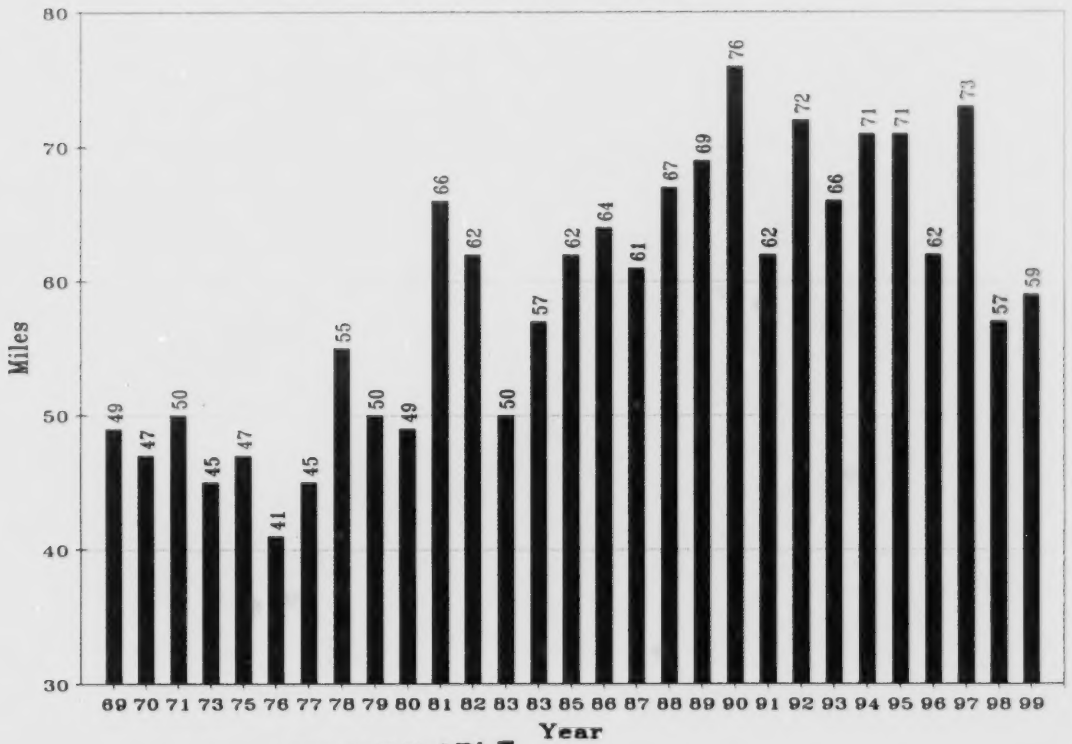
In 1999 the median distance from home to college for college freshmen was 59 miles. This has fluctuated over time.

- Between 1969 and 1977, the median distance from home to college was about 46 miles.
- Beginning in 1978, this distance grew to a peak of 76 miles in 1990. Between 1990 and 1997 this averaged about 69 miles.
- Since 1998 median distance from home to college has shrunk back below 60 miles.

(The 2000 Freshman Survey does not include information for public or private 2-year colleges, and thus is not comparable to data reported for prior years.)

Distance is important because of its strong relationship to parental income. Students from the lowest levels of parental income usually attend colleges closest to home. Students from the families with the highest levels of parental income tend to enroll in colleges farthest from home. In 1997 median mileage from home to college for students from families with income of less than $20,000 per year was 45 miles. For students from families with incomes of more than $200,000 per year, median mileage was 258 miles.

Median Distance from Home to College for Freshmen
1969 to 1999



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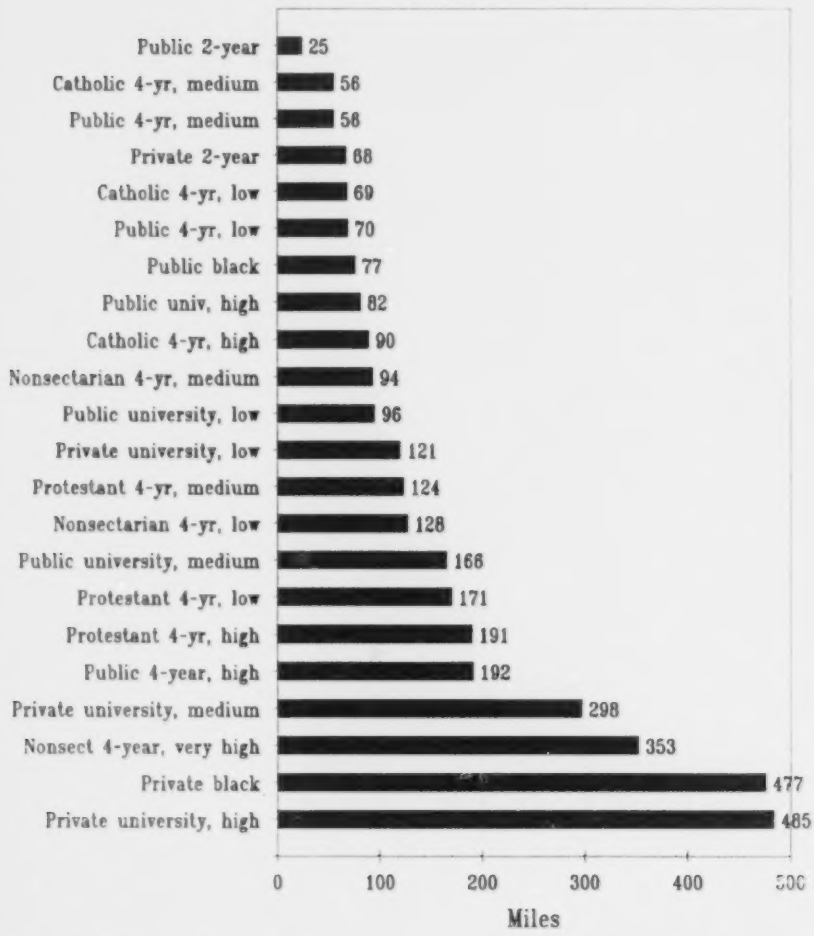
Median Distance from Home to College for Freshmen by Institutional Control, Type and Selectivity 1999



Other correlates with distance to college attended were:

- *Father's education.* Median mileage from home to college increases with father's education. If the father did not complete high school, median mileage was 38. If dad was a high school graduate, mileage increased to 49. If dad was a college gradate the mileage was 91, and it increased to 185 miles if he had a graduate degree.
- *Degree plans.* For students who aspired to an associate degree or less, median mileage between home and college was about 40. For those seeking a bachelor's degree this increased to 58 miles. For students seeking master's degrees mileage increased to 82, and further to 122 for those planning on a doctorate. Those seeking law degrees started out 168 miles from home.

The above chart shows median mileage distance between home and college for 1999 college freshmen by institutional control, type and selectivity. Here the range was great, from 25 miles for freshmen entering a public 2-year college to 485 miles to freshmen entering a highly selective private university.

Emigration to Attend College

The IPEDS data are collected on college freshmen who have graduated from high school during the previous 12 months. They are collected from institutions on the fall IPEDS enrollment survey in even-numbered years. The most recent data are for 1998, and data have been collected since 1986 in a similar format.

Roughly one out of five college freshmen who graduated from high school during the previous 12 months leaves their home state to enter college in another state. This pattern has held up quite consistently between 1986 and 1998 as shown in the following table:

Year	Freshmen Residents of State	Leaving State	Percent
1998	1,568,075	287,658	18.3%
1996	1,545,756	304,208	19.7%
1994	1,467,796	296,352	20.2%
1992	1,397,797	279,256	19.8%
1988	1,328,604	233,933	17.6%
1986	942,302	203,379	21.6%

While about 80 percent of all undergraduates are enrolled in public institutions, in 1998 about 62 percent of those who leave their home state and enroll elsewhere enter private institutions:

Institution Attended	Number of Emigrants	Percent of Total
Public 4-year	97,433	34.1%
Public 2-year	12,039	4.2%
Private 4-year	169,728	59.4%
Private 2-year	6,543	2.3%

Emigration to attend a private in another state makes sense: private institutions offer religious environments, small size and other features important to students. Also, as we have seen in the Freshman Survey data, those who attend distant

colleges tend to have the highest family incomes to finance these relatively higher college attendance costs.

The states in 1998 where more than 70 percent of the emigrants left to enroll in a private institution in another state were:

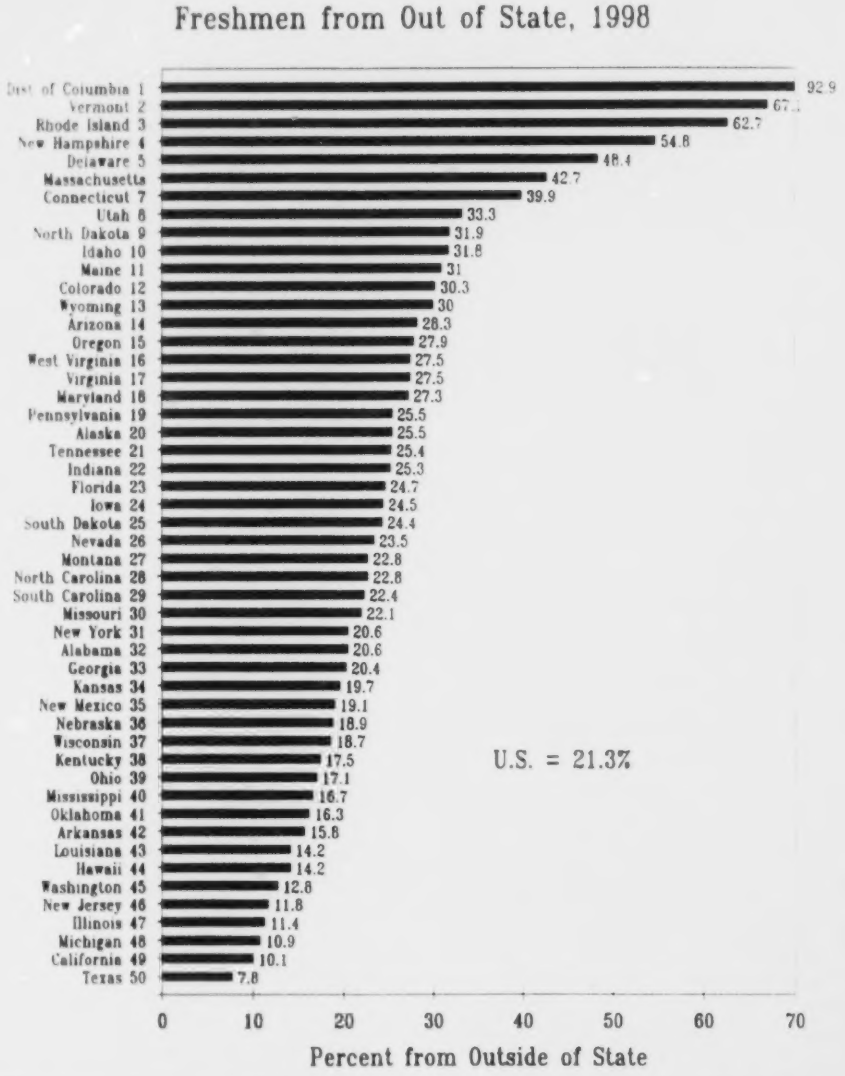
Maine	77.4%
Connecticut	74.7%
Massachusetts	74.0%
Rhode Island	72.9%
New Hampshire	72.3%
Utah	71.8%
Washington	71.2%
Vermont	70.8%

However, what surprises us is the 38 percent of emigrants who bypass public institutions in their home states to attend public institutions in another state. In eleven states, over half of those who leave their home state to enroll in college in another state enter a public institution. That is, they bypass the closer, lower priced public institutions in their home state in pursuit of some feature of public institutions in another state. These eleven states, and the proportion of their emigrants enrolled in public institutions in 1998 are:

South Dakota	68.3%
Alaska	57.3%
Wyoming	56.9%
Mississippi	54.5%
Arkansas	54.2%
Nebraska	52.5%
Louisiana	52.2%
Idaho	51.7%
Wisconsin	51.3%
Nevada	51.1%
Tennessee	50.9%

Clearly, these states should be asking themselves serious questions about the attractiveness of the offerings available in their own public 4-year and 2-year colleges and universities.

Of course some states facilitate interstate migration of their students. They do so through interstate reciprocity agreements (**Minnesota-Wisconsin**), regional compacts (**New England Board of Higher Education, Southern Regional Education Board and Western Interstate Commission on Higher Education**), portability of state financial aid assistance (**Vermont** and the rest of **New England**) and other legal devices.



But states are conflicted about doing so. On the one hand many try to fight the "brain drain" when talented students leave their home state to study elsewhere (**Georgia** and elsewhere). On the other hand they may find it less expensive to the state to encourage state residents to go somewhere else to study (**New Jersey, Illinois, Vermont**).

Few if any states consider the educational benefits of diversifying the educational mix of student bodies. To the extent students learn from their interactions with fellow students during their years on campus, they are likely to learn more through associations with students with backgrounds different from their owns than by associating with students who are similar to themselves. Moreover, the demographic projections of growth

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Interstate Migration of First-Time College Freshmen Who Graduated from High School in Previous 12 Months

	1986			1988			1992			1994			1996			1998		
	Out of	Into	Net Mig	Out of	Into	Net Mig	Out of	Into	Net Mig	Out of	Into	Net Mig	Out of	Into	Net Mig	Out of	Into	Net Mig
Alabama	1592	3487	1895	1980	5764	3784	2111	6892	4781	2203	6373	4170	2397	5726	3329	2608	5679	3071
Alaska	1046	40	-1006	1142	64	-1078	1088	264	-824	1230	201	-1029	1444	191	-1253	1647	280	-1367
Arizona	1230	3721	2491	1505	3782	2277	1847	3935	2088	2158	4848	2690	2279	5134	2855	2267	5968	3701
Arkansas	1492	997	-495	1679	2178	499	1823	2481	658	1846	2045	199	1753	2450	697	1890	2469	579
California	6431	10555	4124	8555	8204	-351	12529	12229	-300	15706	14277	-1429	14962	13034	-1928	14355	16251	1896
Colorado	3529	1603	-1926	4205	5213	1008	4110	6049	1939	4662	5637	975	4483	5996	1513	4988	6846	1858
Connecticut	9270	5079	-4191	9910	4966	-4944	10226	5601	-4625	10109	6044	-4065	10358	6764	-3594	10946	6942	-4004
Delaware	1142	2666	1524	1194	3096	1902	1289	2664	1375	1525	2686	1161	1363	2977	1614	1395	3182	1787
Dist of Col	1114	4761	3647	1248	4656	3408	1111	5401	4290	1281	6718	5437	1304	6734	5430	1449	6455	5006
Florida	7143	7312	169	8405	8375	-30	8853	8726	-127	9058	9449	391	8734	9956	1222	8566	14961	6395
Georgia	4737	4971	234	5822	5624	-198	6758	6672	-86	6051	7500	1449	6203	7203	1000	6473	8282	1809
Hawaii	1227	531	-696	1439	351	-1088	1559	764	-795	1755	756	-999	2069	1111	-958	2163	854	-1309
Idaho	807	2350	1543	971	2651	1680	1443	3084	1641	1685	2456	771	1899	2137	238	1921	2620	699
Illinois	13133	4444	-8689	15885	5601	-10284	14552	7181	-7371	15858	6357	-9501	15948	7410	-8538	17115	8217	-8898
Indiana	2947	6113	3166	3509	9769	6260	3920	9836	5916	4558	9756	5198	4474	9876	5402	4737	11335	6598
Iowa	2858	3762	904	3282	5209	1927	3158	6248	3090	3209	6294	3085	3024	6394	3370	3189	6521	3332
Kansas	1282	3182	1900	1750	3486	1736	1945	3512	1567	2032	3513	1481	2125	3522	1397	2429	3824	1395
Kentucky	1826	2529	703	2104	3707	1603	2235	3984	1749	2469	3838	1369	2769	3692	923	3083	4083	1000
Louisiana	1858	3553	1695	2458	3719	1261	2776	4396	1620	3182	4966	1784	3177	4391	1214	2952	4312	1360
Maine	1862	1282	-580	2050	1103	947	2928	2069	-859	2968	2050	-918	3286	2255	-1031	3343	1952	-1391
Maryland	7790	3330	-4460	8628	4303	-4325	8937	5816	-3121	9415	6518	-2897	9935	6959	-2976	10606	7024	-3582
Massachusetts	9184	15390	6206	8985	17590	8605	11864	19354	7490	11586	20055	8469	12431	20739	8308	12770	22115	9345
Michigan	4589	2346	-2243	5706	3191	-2515	5619	4922	-697	6322	5647	-675	5803	6045	242	6532	6388	-144
Minnesota	5556	3991	-1565	6835	5458	-1377	6966	5834	-1132	7431	6292	-1139	7853	6548	-1305	8358	13642	5284
Mississippi	1016	1664	648	1578	1788	210	1637	3059	1422	1892	3101	1209	1477	3257	1780	1369	3100	1731
Missouri	3633	4539	906	4150	4901	751	4590	5991	1401	4770	6555	1785	5121	6703	1582	5414	7481	2067
Montana	1004	155	-849	1172	352	-820	1481	1248	-233	1692	1324	-368	1722	1389	-333	1718	1372	-346
Nebraska	1581	1665	84	2042	1807	-235	2177	2216	39	2229	2298	69	2149	2473	324	2431	2520	89
Nevada	812	194	-618	846	584	-262	1220	593	-627	1382	857	-525	1579	1054	-525	1740	1000	-740
New Hampshire	2174	2677	503	2373	4091	1718	3003	4791	1788	3017	4684	1667	3394	4927	1533	3874	4494	620
New Jersey	20582	1693	-18889	21458	1879	-19579	21372	2868	-18504	22195	3038	-19157	22218	3502	-18716	23160	4000	-19160
New Mexico	1038	943	-95	1496	1180	-316	1621	1314	-307	2143	1314	-829	2347	1560	-787	2632	2025	-607
New York	18664	16480	-2184	21112	12826	-8286	21809	17872	-3937	23581	19678	-3903	24268	21125	-3143	24369	23894	-475
North Carolina	2005	9529	7524	2434	9708	7274	2428	11044	8616	2675	11133	8458	3044	10463	7419	3409	10964	7555
North Dakota	407	1561	1154	581	2141	1560	1048	2538	1490	1044	2300	1256	1182	2527	1345	940	2354	1414
Ohio	7079	6265	-814	8858	8671	-187	9336	8991	-345	9690	9794	104	9282	10432	1150	10424	11960	1536
Oklahoma	1509	1130	-379	1984	1958	-26	2176	2157	-19	2261	2295	34	2374	2368	-6	2389	3147	758
Oregon	1660	2306	646	2042	2760	718	2791	3341	550	3337	3721	384	3371	3867	496	3832	4059	227
Pennsylvania	10543	14662	4119	12278	16667	4389	12350	18835	6485	13038	19395	6357	13667	19850	6183	14885	22270	7385
Rhode Island	1616	4256	2640	1762	2264	502	2020	6442	4422	2151	6700	4549	2408	6245	3837	2369	6815	4446
South Carolina	2088	3114	1026	2432	3862	1430	2549	3534	985	2677	4400	1723	2701	5133	2432	2766	5291	2525
South Dakota	953	1161	208	1149	1057	-92	1213	1517	304	1275	1719	444	1514	1339	-175	1617	1453	-164
Tennessee	2933	4841	1908	3925	5450	1525	4071	5694	1623	4180	6300	2120	4367	6916	2549	4660	7623	2963
Texas	4311	5031	720	6225	5793	-432	7597	6990	-607	8324	8486	162	9561	7666	-1895	11239	7979	-3260
Utah	788	496	-292	884	842	-42	990	4147	3157	1078	5426	4348	1045	5716	4671	1288	6078	4790
Vermont	1048	3170	2122	1208	2490	1282	1583	3141	1558	1733	3229	1496	1781	3451	1670	2043	3611	1568
Virginia	6105	7021	916	7485	8921	1436	7028	10704	3676	7244	10628	3384	7243	11282	4039	8211	11079	2868
Washington	2559	2018	-541	3265	2364	-901	3855	3359	-496	4192	4153	-39	4732	4241	-491	5193	3579	-1614
West Virginia	1142	2529	1387	1459	4063	2604	1619	3637	2018	1622	3601	1979	1698	3411	1713	1781	3560	1779
Wisconsin	3454	5783	2329	4641	6651	2010	5212	4308	-904	5386	4777	-609	6019	5021	-998	6152	6591	439
Wyoming	625	501	-124	597	803	206	892	631	-261	839	952	113	925	945	20	1038	1052	14
Puerto Rico							920	82	-838	761	40	-721	674	22	-652	633	6161	5528
Virgin Isla							331	0	-331	278	6	-272	325	5	-320	371	17	-354
TOTALS																		

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of minority populations, combined with globalization of just about everything in adult life, suggests the building diversity into the educational experience of students adds to that experience. Institutions understand this far better than state policy makers.

Immigration to Attend College

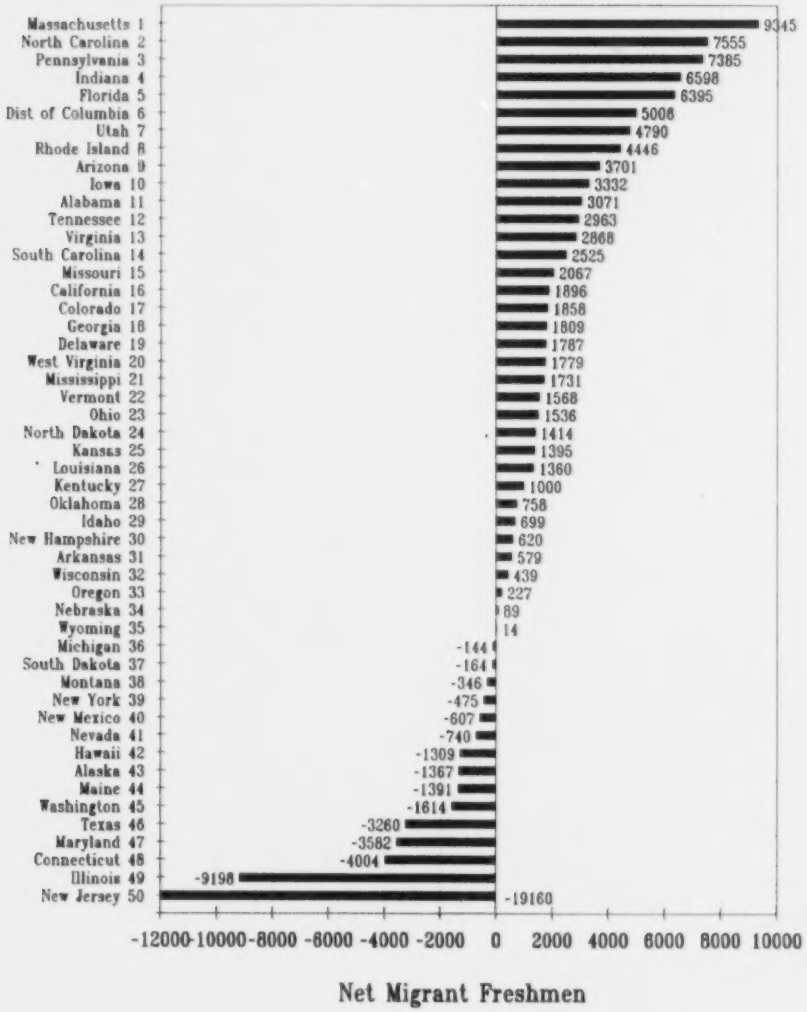
Students who leave their home state to attend college enroll in a college in another state. While states export some of their students, they also important students from other states who must find their colleges more attractive than any and all that they left behind. This is where we measure geographic diversity of state enrollments. Here we examine data that describe freshmen enrollments from out of state.

The chart on page 5 shows the proportion of each state's first time freshmen that came from out-of-state. In 1998, the shares of nonresidents ranged from 7.8 percent in **Texas** to 92.9 percent in the **District of Columbia**.

- Texas had the least geographically diverse enrollments. Out of 102,245 first-time college freshmen, 94,266 came from in-state and only 7,979 came from outside of Texas. The non-Texans came mainly from **Louisiana, New Mexico, Oklahoma, California** and **Arkansas**.
- The city-state of the District of Columbia had the most geographically diverse freshman class. Out of 6,946 freshmen in colleges in DC, only 491 came from within the District while 6,455 came from elsewhere. Nearly all of the immigrant freshmen were enrolled in private 4-year institutions, and over half came from **New York, Maryland, New Jersey, Pennsylvania, California, Massachusetts** and **Virginia**.

(Note that **Minnesota** and **Puerto Rico** have been dropped from this chart due to incomplete reporting. Note also the concentration of the smallest states, often New England states, near the top of this ranking. Likewise, note the concentration of the largest states at the bottom.)

Freshmen Net Migration by State, 1998



We are amazed not at those students who cross state lines to attend private institutions. But we are truly amazed at those who bypass their own state institutions to attend a public institution in another states. In 1998 the states with the largest share of immigrant freshmen attending public institutions were:

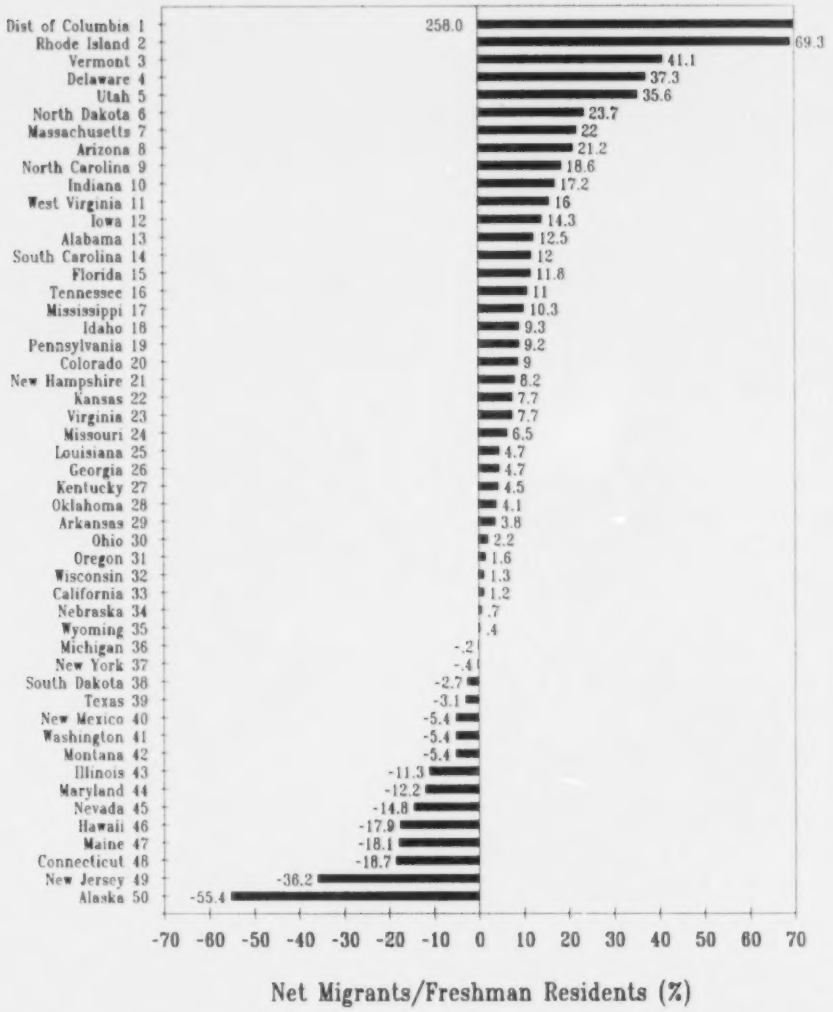
Nevada	92.2%
Montana	87.3%
Delaware	86.8%
North Dakota	85.1%
New Mexico	84.6%
Mississippi	82.9%

In 21 states, over half of the immigrant freshmen were enrolled at public institutions.

Net Migration

So far we have examined data that

Freshmen Net Migration Rates by State, 1998



describe emigration from home states to attend college, and immigration to other states. Here we examine net migration, which is simply immigrants less emigrants. Some states are net importers of college freshmen while others are net exporters.

Expressed most directly: some states provide more attractive higher educational opportunities to students than do other states. Here students are talking with their feet. The states that import more freshmen than they export can boast of providing relatively attractive higher educational opportunities. The states that export more of their residents to other states than they attract should ask themselves why their colleges and universities are relatively unattractive to students.

In terms of numbers, **New Jersey** and **Illinois** have been the mothers of all state net-exporters for as long as the data have been collected.

- In 1998 out of 52,940 college freshmen from New Jersey, 29,780 enrolled in New Jersey institutions and 23,160 left New Jersey and enrolled elsewhere (mainly **Pennsylvania, New York** and **Massachusetts**). Just 4,000 freshmen came to New Jersey and most of these were to attend private 4-year institutions.
- In 1998 **Illinois** sent 81,379 of its residents to college, 63,964 within Illinois and 17,415 elsewhere (mainly to **Indiana, Iowa, Wisconsin** and **Missouri**). Illinois attracted 8,217 freshmen from other states, nearly all to attend private 4-year institutions in Illinois.

The big net importers of college freshmen were **Massachusetts, North Carolina, Pennsylvania, Indiana, Florida** and the **District of Columbia**. In each case, except Florida, the big draw was the private 4-year college sector.

Conclusions

Students tell us important stories about the attractiveness of each state's higher educational opportunities through their migration patterns. But we must listen carefully to the data to hear their stories. While about a fifth of all first time freshmen cross state lines to attend college, students are more likely to leave some states than others. They are also attracted to some states more than others. This flow of students can have important benefits to students and states: getting away from home as a step toward adulthood, studying with students from diverse geographic backgrounds to broaden experience, and bringing student resources into communities where attractive colleges are located.

The states that have positive net migrations of students benefit. They can point with some pride to where their institutions are drawing students from distant locations past intervening opportunities. But other states should be asking themselves where and why they have failed to provide competitive higher educational opportunities for students.

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Net Interstate Migration of Pell Grant Recipients 1978-79 to 1999-99

The interstate migration of Pell Grant recipients is a special case in migration studies. Most interstate college student migration occurs among those with sufficient resources to be able to finance a substantial portion of nonresident or private college attendance costs from their own family resources.

But Pell Grant recipients come from families in the bottom half of the family income distribution (if dependent), or are low income due to their independent student status. Thus, for Pell Grant recipients to cross state borders means that they have bypassed less costly in-state institutions and state financial aid resources in favor of more distant and expensive higher education opportunity.

Here we briefly examine net interstate migration of Pell Grant recipients for 1998-99, the most recent year for which data have been published. This analysis indicates which states are relatively attractive to students from low income families, and which are not.

Because the Department of Education has published dollar amounts received by Pell Grant recipients, this analysis also illustrates which states gain federal Pell Grant dollars for their higher educational institutions, and which states loose these federal dollars because they are net exporters of Pell Grant recipients.

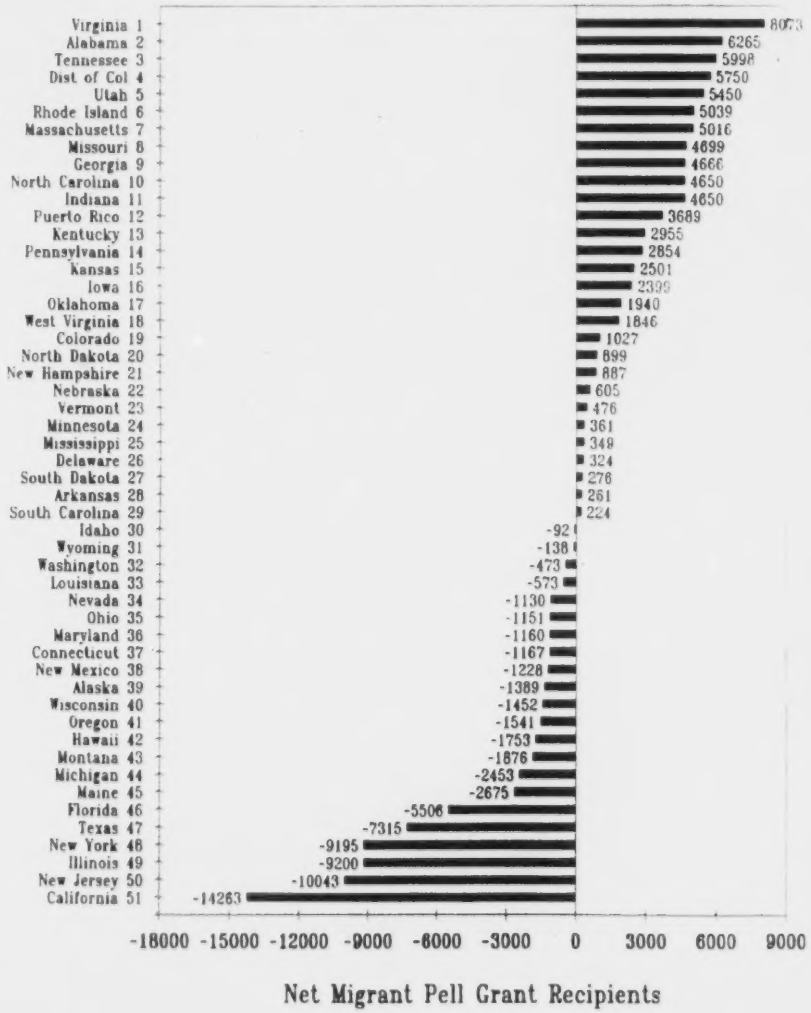
The Data

The data used here come from tables included in the *Pell Grant End of Year Report* published by the Office of Postsecondary Education at the U.S. Department of Education. These tables include state-level data on the number of Pell Grants and the dollar amounts received by students by institutional control (public, private, for-profit), and by location (state of recipient residency, state location of institution). The difference between these two tables of data represent net interstate migration of Pell Grant recipients.

OPPORTUNITY has compiled these federal data in a massive Excel workbook with worksheets with each state's data. The worksheets span the years from 1976-77 through 1998-99. This workbook is available for viewing on our website www.postsecondary.org under the Spreadsheets button. Those with further questions may call OPPORTUNITY for clarification of these data.

One caution on the data: Arizona has

Pell Grant Recipient Net Migration by State, 1998-99



Net Interstate Migration of Pell Grant Recipients

State	78-79	80-81	82-83	84-85	86-87	88-89	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99
Alabama	3,921	3,718	1,696	1,925	3,548	2,154	7,667	7,754	8,191	8,879	7,576	7,196	6,900	6,650	6,265
Alaska	(465)	(899)	(856)	(1,925)	(1,954)	(1,606)	(549)	(843)	(528)	(625)	(1,088)	(1,160)	(1,154)	(1,324)	(1,389)
Arizona	1,855	4,267	3,539	16,407	27,885	12,627	6,737	6,448	7,113	7,136	7,855	11,576	10,628	13,062	16,314
Arkansas	124	411	898	3,785	4,291	3,775	135	693	553	1,073	603	679	473	781	261
California	3,824	1,403	927	(5,283)	(5,442)	(3,951)	(6,927)	(3,773)	(7,363)	(8,985)	(12,105)	(15,016)	(14,295)	(14,728)	(14,263)
Colorado	1,034	1,406	821	(153)	(1,225)	(1,174)	(914)	(343)	470	552	320	328	635	1,277	1,027
Connecticut	(2,476)	(4,987)	(3,286)	(312)	1,745	2,904	6,600	(134)	(1,429)	(1,209)	(1,150)	(1,087)	(813)	(1,136)	(1,167)
Delaware	308	392	258	254	5,382	17,702	100	569	409	628	(43)	365	296	304	324
Dist of Columbia	2,178	39,662	3,333	2,497	3,624	3,218	2,812	3,303	4,443	3,807	4,229	4,656	4,650	5,303	5,750
Florida	(1,712)	(1,141)	(846)	1,044	3,624	6,021	(366)	(4,102)	(6,087)	(5,530)	(5,887)	(5,018)	(4,432)	(5,409)	(5,506)
Georgia	(1,275)	(2,306)	(2,577)	1,046	(79)	(3,851)	(975)	781	2,021	3,416	2,550	2,312	2,622	4,222	4,666
Hawaii	(162)	(559)	(394)	(149)	(146)	(596)	55	14	(2,145)	(405)	(661)	(749)	(1,255)	(1,579)	(1,753)
Idaho	(853)	(1,431)	(1,783)	(360)	(429)	(489)	194	379	327	560	457	367	147	47	(92)
Illinois	(4,429)	(8,191)	(11,652)	(9,139)	(9,322)	(10,425)	(8,812)	(10,429)	(11,036)	(8,988)	(8,715)	(9,344)	(8,810)	(9,279)	(9,200)
Indiana	6,365	5,809	8,879	708	(566)	1,352	2,077	2,602	3,514	3,809	3,147	3,533	3,696	4,003	4,650
Iowa	911	1,882	596	1,063	560	1,114	995	1,176	1,641	2,139	1,704	2,257	2,532	2,256	2,399
Kansas	1,983	2,957	1,892	1,396	4,303	8,859	2,649	2,840	2,507	2,582	1,990	2,423	2,405	2,430	2,501
Kentucky	3,305	5,049	2,981	5,635	5,527	1,977	1,216	4,045	3,380	3,116	2,456	3,110	2,768	2,897	2,955
Louisiana	1,576	982	(431)	1,761	(136)	(2,551)	2,127	2,174	1,376	1,484	1,276	1,101	691	(155)	(573)
Maine	(355)	(718)	(1,080)	(1,020)	(932)	(1,145)	(1,168)	(1,780)	(2,237)	(2,220)	(2,504)	(2,732)	(2,531)	(2,618)	(2,675)
Maryland	1,029	2,039	(293)	(1,138)	(3,541)	(4,595)	(2,867)	(2,548)	(999)	120	188	(414)	(1,383)	(1,899)	(1,160)
Massachusetts	1,399	2,953	1,155	2,311	4,037	5,164	4,970	5,479	5,117	5,046	4,536	4,234	4,579	4,838	5,016
Michigan	1,093	(341)	(4,441)	(3,424)	(2,589)	(8,441)	(5,799)	(5,821)	(5,387)	(3,860)	(3,747)	(3,679)	(2,702)	(2,627)	(2,453)
Minnesota	819	300	(746)	403	978	1,619	1,296	1,013	1,044	1,187	(993)	629	576	511	361
Mississippi	2,050	1,614	606	(335)	(2,535)	(5,776)	(1,302)	(612)	179	764	414	183	25	19	349
Missouri	1,770	2,115	1,035	4,297	3,891	6,676	5,633	5,479	5,844	6,006	5,149	3,966	4,046	5,064	4,699
Montana	(517)	(506)	(510)	(731)	(1,199)	(1,896)	(1,851)	(1,583)	(1,403)	(1,279)	(1,520)	(1,453)	(1,556)	(1,826)	(1,876)
Nebraska	354	726	411	374	265	(37)	461	750	617	766	640	708	708	749	605
Nevada	(429)	(571)	(485)	(644)	(905)	(420)	3,723	1,602	(426)	(898)	(980)	(830)	(891)	(1,043)	(1,130)
New Hampshire	830	1,953	1,213	928	525	459	156	632	727	959	835	1,027	1,281	1,006	887
New Jersey	(7,327)	(15,717)	(13,370)	(11,255)	(9,474)	(9,165)	(6,647)	(7,652)	(9,825)	(10,122)	(9,586)	(9,837)	(10,125)	(9,908)	(10,043)
New Mexico	(207)	(623)	(952)	(1,270)	(1,499)	(3,250)	(2,591)	(2,320)	(1,601)	(1,330)	(1,409)	(1,474)	(1,407)	(1,440)	(1,228)
New York	(3,754)	(10,599)	(6,821)	(3,360)	5,459	4,077	7,746	11,295	8,627	768	(2,579)	(4,640)	(4,857)	(8,381)	(9,195)
North Carolina	5,026	5,833	3,969	5,294	5,471	5,342	5,324	4,224	4,095	4,707	4,409	4,382	4,479	4,591	4,650
North Dakota	707	863	1,230	1,347	943	1,130	401	548	792	1,088	1,095	1,236	1,214	919	899
Ohio	1,822	1,310	(87)	2,674	(509)	(1,202)	9,277	5,985	832	176	(483)	(1,170)	(1,076)	(1,437)	(1,151)
Oklahoma	2,115	2,974	1,822	1,967	690	570	1,510	2,956	2,987	3,188	2,754	1,552	1,747	1,540	1,940
Oregon	1,040	701	(91)	1,169	488	(245)	(393)	(1,006)	(836)	(641)	(898)	(983)	(944)	(1,379)	(1,541)
Pennsylvania	(1,184)	(176)	(2,401)	(428)	1,068	788	3,979	3,847	4,308	3,678	2,375	1,740	2,346	2,605	2,854
Puerto Rico										(2,484)	(1,776)	(1,901)	(3,384)	(2,436)	3,689
Rhode Island	1,339	2,387	1,745	1,660	1,197	1,479	2,505	3,313	4,062	4,060	3,933	4,144	4,104	4,377	5,039
South Carolina	(362)	618	240	(44)	(879)	(1,837)	(1,977)	(331)	(660)	326	(77)	(58)	(226)	13	224
South Dakota	340	37	275	774	1,810	783	802	1,276	1,300	1,454	1,323	1,046	654	313	276
Tennessee	6,404	6,903	4,542	7,509	6,264	6,844	7,507	8,034	7,256	6,382	5,809	5,492	5,341	5,173	5,998
Texas	5,257	6,205	4,805	3,274	(1,952)	(7,991)	(6,275)	(4,021)	(2,647)	(797)	(1,916)	(3,213)	(5,315)	(6,808)	(7,315)
Utah	(455)	(1,306)	30,558	4,191	3,930	4,420	4,811	5,950	6,070	5,622	5,374	5,016	5,308	5,466	5,450
Vermont	449	702	94	70	49	144	258	535	530	484	459	519	506	711	476
Virginia	1,114	1,945	2,177	3,646	2,556	3,556	4,061	4,983	6,064	5,644	4,822	5,566	7,572	8,522	8,073
Washington	1,117	1,354	(166)	(398)	(757)	(1,245)	4	(182)	(390)	390	(281)	(86)	(301)	(119)	(473)
West Virginia	1,898	3,092	2,702	3,345	2,504	2,899	2,895	3,376	3,049	2,596	2,112	1,650	1,738	1,838	1,846
Wisconsin	1,421	1,560	971	297	198	(818)	(1,596)	(1,265)	(1,673)	(608)	(728)	(1,036)	(1,170)	(1,239)	(1,452)
Wyoming	(47)	(69)	16	(229)	102	84	3	482	426		148	119	(89)	55)	(138)

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been dropped from the charts reported here. The University of Phoenix, which is a national, for-profit school, reports all of its Pell Grant recipients as being educated in Arizona. This distorts Arizona's data and so we have deleted Arizona from the charts. Also the District of Columbia and Puerto Rico are counted as "states" here.

Interstate Net Migration

In 1998-99 29 states imported more Pell Grant recipients than they exported. The remaining 22 states exported more Pell Grant recipients than they imported.

The largest net-importers of Pell Grant recipients were: **Virginia, Alabama, Tennessee, District of Columbia, Utah, Rhode Island** and **Massachusetts**. Each of these states imported 5000 or more Pell Grant recipients than they exported. At the other end of the scale, the largest net exporters of Pell Grant recipients in 1998-99 were **California, New Jersey, Illinois, New York, Texas** and **Florida**. Each exported 5000 or more Pell Grant recipients more than it imported. California in particular exported over 14,000 more Pell Grant recipients than it imported.

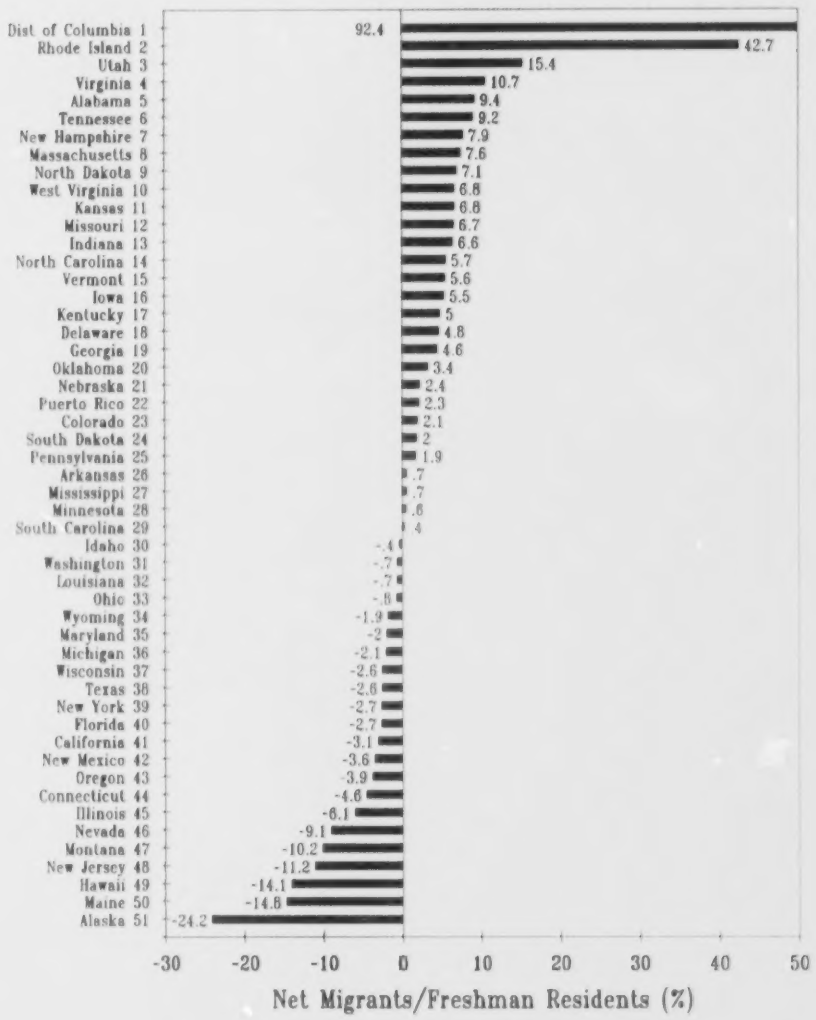
To control for differences in the sizes of each state generally and their Pell Grant recipient population in particular, we have calculated Pell Grant recipient net migration *rates* for each state. This chart appears on this page. This migration rate is the number of net migrants divided by the number of state resident Pell Grant recipients for 1998-99. In this calculation, the states with the highest Pell Recipients net migration rates are **District of Columbia, Rhode Island** and **Utah**. The states with the largest negative net migration rates are **Alaska, Maine** and **Hawaii**.

The table on the previous page shows the number of net Pell migrants by state for selected years between 1978-79 and 1998-99. Many states have always a positive net flow of Pell Grant recipients, and other states have always had negative net flows. What we find most interesting is those states where the flow has shifted from positive to negative. For example:

- **California** attracted more Pell Grant recipients from other states until the early 1980s, but since then has exported a growing number relative to exports. Other states that have followed this pattern include **Texas, Wisconsin, Ohio, Washington** and **Oregon**. This implies a deterioration in higher educational opportunity for low income students in these states.
- **Pennsylvania** used to export more Pell Grant recipients than it imported, but reversed this in the late 1980s. Other states that have done the same include **Georgia, Idaho** and **Utah**.

Net migration of Pell Grant recipients is an important indicator of how well states are serving students from low income family backgrounds.

Pell Grant Recipient Net Migration Rates, 1998-99



The sorry state . . . *. . . of the states*

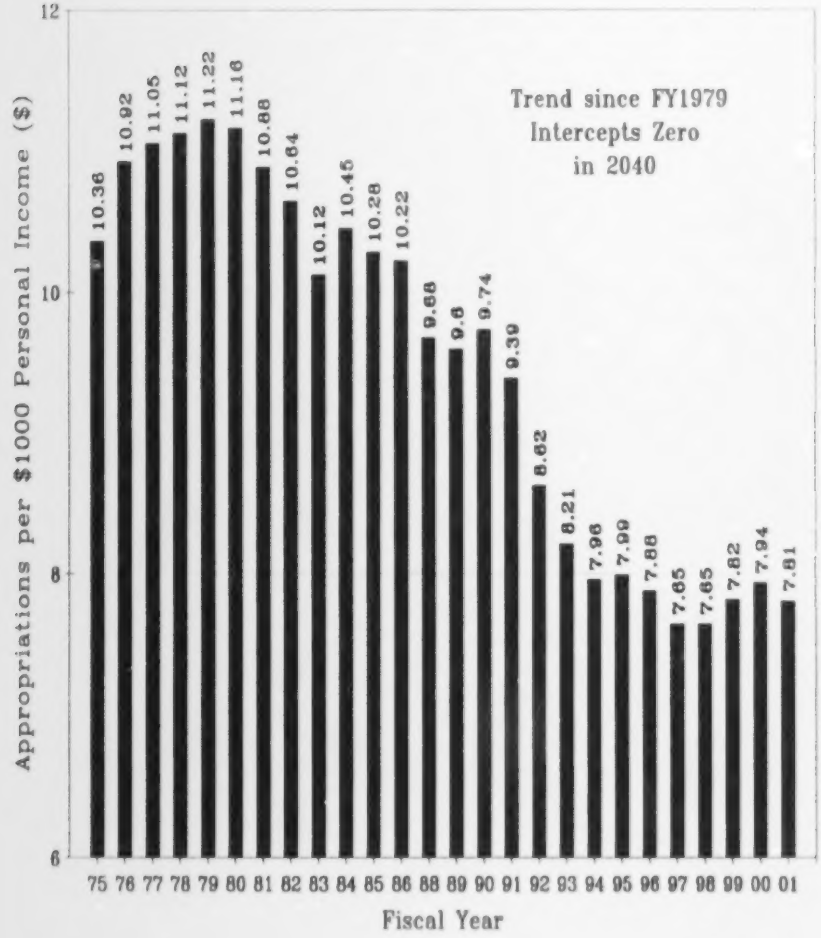
State Tax Fund Appropriations for Higher Education FY2001

The 50 states appropriated $60.6 billion in state tax funds for higher education for FY2001, the current fiscal year.

- In current dollars this represents a commendable 7.0 percent increase over FY2000 appropriations.
- Taking inflation out of this increase reduces it to a still commendable 3.5 percent increase.

However, between 1999 and 2000 state personal income calculated in the same way as in prior years increased by more than the appropriation. Therefore, by this measure state tax fund appropriations *decreased* between FY2000 and FY2001. The FY2000 appropriation was $7.94 per $1000 of state personal income, compared to $7.81 for FY2001.

Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income FY1975 to FY2001



Because both state tax fund appropriations and state personal income numbers have been revised for FY2000, there is some confusion about whether state *effort* in support of higher education increased or decreased slightly.

But there is no confusion whatsoever about the huge reduction in state tax effort in support of higher education between FY1979 and FY1997 and FY1998. The effort is measured as appropriation funding controlling for state resources available for this purpose. In this analysis, state personal income is used as the tax base available in each state available for taxation in support of state government programs. The units of this measure are state tax dollar appropriations for higher education per $1000 of state personal income.

The chart on this page graphs the record of state investment effort in higher education for the fiscal years from 1975 through 2001. The effort rose from $10.36 in FY1975 to a peak of $11.22 in FY1979. Thereafter, the effort declined sharply in the early 1980s, and again in the early 1990s, during recession phases of the business cycle.

By FY1997 and FY1998 the state effort had declined to $7.65 per $1000 of state personal income. This was a decline of $3.57 per $1000 of state personal income. Expressed another way, state tax fund appropriations for higher education, which totalled $60.6 billion for FY2001, would have been $87 billion in FY2001 at the FY1979 level of state effort.

As we have shown many times in previous analyses reported in these pages of OPPORTUNITY, governors

and legislators have chosen to divert state tax resources from higher education into other state budget priorities. These priorities for many years have been prisons and Medicaid. State policy makers have decided that building and filling prisons and providing health care to poor people were more important than investing in their states' future adult populations.

If the decline in state tax effort since FY1979 continues, state tax fund appropriations for higher education will reach zero in 2040. Don't laugh at this prospect: the states are already 30 percent of the way to this end. Some states--**Colorado, Vermont** and **Arizona** for example, are half way there already and are about 20 years away from this end.

Here we update our previous reports on the higher education investment records of the 50 states. Some states have stepped back from the course they were on. But other states are plunging ahead. Fifteen of the 50 states hit all-time low efforts in support of their public higher education systems for FY2001.

This is not a pretty picture. There is no way to dress up the sorry record of state investment in higher education compiled over the last two decades. The economy of the United States is now about 28 years into what we call the human capital economy. The curtailment of state investment during this period denies the possibility of state return on that investment. One would think that governors and legislators elected to represent the public interest would have caught on to this by now.

The Data

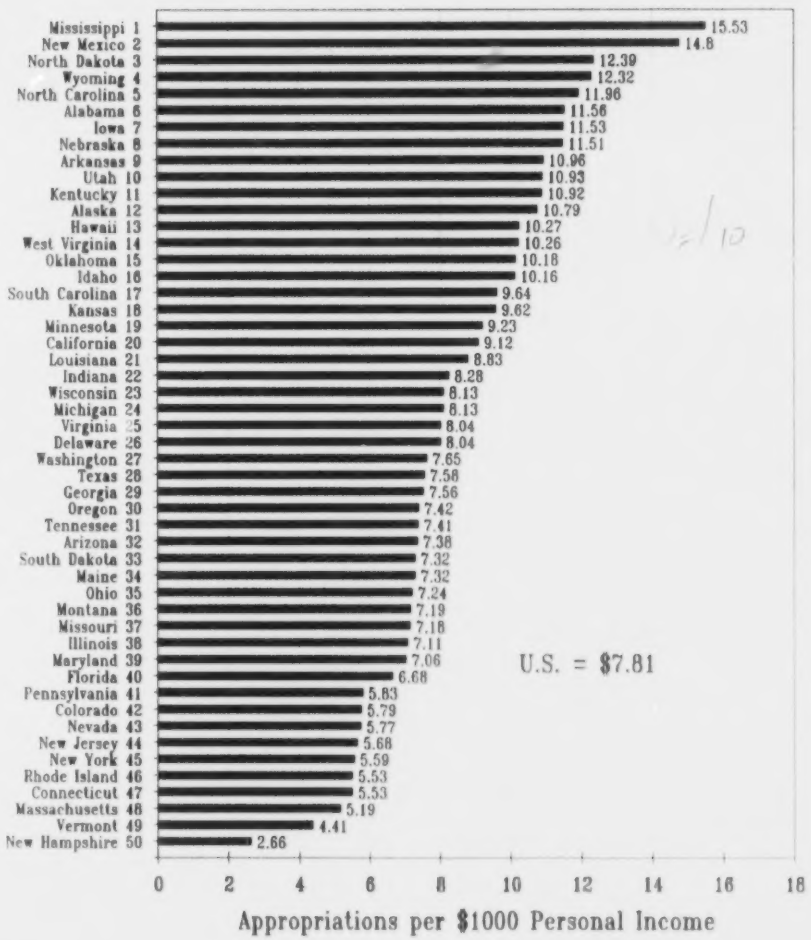
This analysis combines data from two sources. The first source is the annual compilation of state tax fund appropriations for higher education prepared by the Center for the Study of Education Policy at Illinois State University. This compilation was prepared by James Palmer and Sandra Gillihan. Their compilation is first reported in the late fall each year in the *Chronicle of Higher Education*. The data are also available on their Grapevine website at:

http://coe.ilstu.edu/grapevine

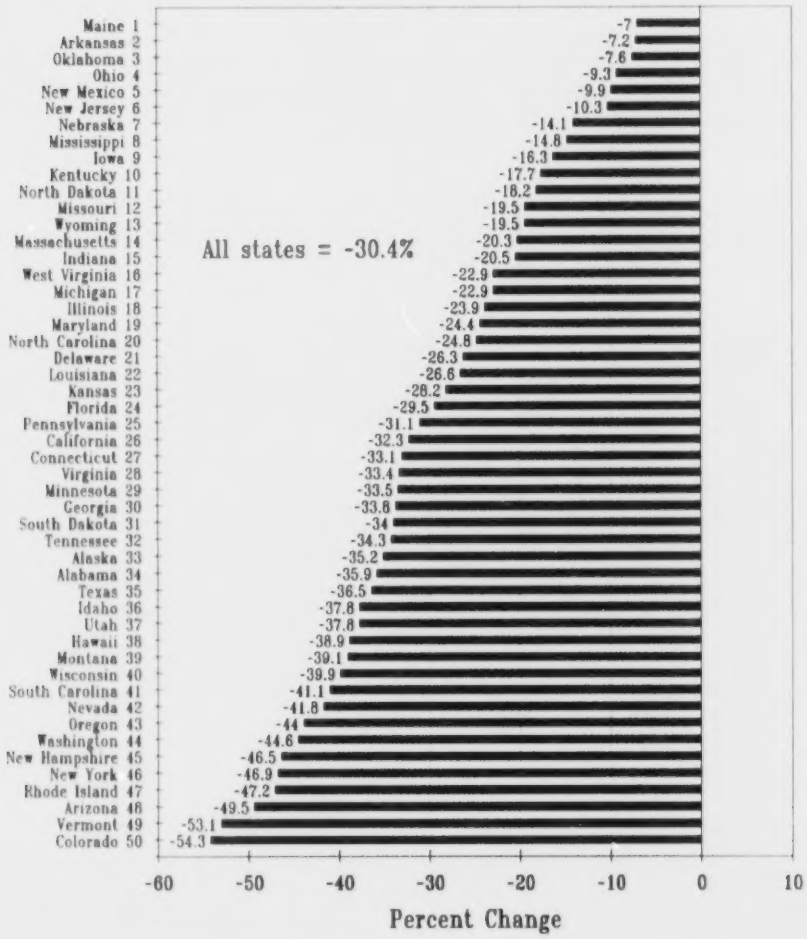
The definitions for these data are:

- Appropriations, not actual expenditures
- For annual operating expenses
- Includes state aid to local public community colleges and vocational-technical colleges or institutes that are operated primarily for high school graduates
- Includes appropriations for statewide coordinating or governing boards
- Includes appropriations for state student financial aid programs
- Includes appropriations destined for higher education but made to other state agencies, such as those administering faculty fringe benefits
- Includes appropriations directed to

Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income FY2001



Change in Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income FY1979 to FY2001



private colleges and universities
- Excludes appropriations for capital outlays and debt service
- Excludes appropriations of funds from federal sources, students fees, auxiliary enterprises and other non-tax sources

Significantly, these state tax fund appropriations exclude local property tax contributions for community college operations. This is important in about 25 state that have this public revenue resource for higher education.

The second source of data used in this analysis is state personal income estimates prepared by the Bureau of Economic Analysis--a branch of the federal Department of Commerce. These data are reported in BEA's publication *Survey of Current Business*. We would like to refer the reader to the BEA's website for this information, but frankly we have never understood its organization nor the data available there. So we stick to the *Survey of Current Business* and recommend that others do the same.

We have observed one convention in compiling these data that readers should note: we have used current information on state tax fund appropriations, and current state personal income estimates for each year and state. What this means is that when state appropriations numbers are later revised--as they have been since the mid 1980s--we do not incorporate those later revisions into the numbers used here. Likewise, BEA is forever revising its historical estimates of state personal income. We ignore these revisions too.

What we have compiled, analyzed and report here is the new annual information reported each year by Grapevine and BEA--not the revisions to previously reported numbers. In the future we may change this, but all data used here are those initially reported in the year they were first announced.

State Effort in FY2001

For FY2001 the states appropriated $60,568,619,000 in state tax funds for higher education. For CY1999 personal income in the 50 states was $7,756,653,000,000. Therefore, state tax fund appropriations for higher education were $7.81 per $1000 of personal income for FY2001.

As shown in the chart on page 13, state effort ranged from a miserly $2.66 in **New Hampshire** to a generous $15.53 in **Mississippi**. The states making the weakest effort were all either in New England or were mid Atlantic states. These are states with very large private college sectors and where public institutions play a relatively smaller role in providing higher education.

The states making the greatest effort to fund higher education tend to be relatively poor states--low per capita personal income and high poverty rates--that often do not have significant private college sectors to carry a part of the load of providing higher

Appropriations of State Tax Funds for Operating Expenses of Higher Education per $1000 of Personal Income by Fiscal Year

State	1975	1977	1979	1980	1982	1984	1986	1988	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Change: FY1979 to FY2001 Dollars	Change: FY1979 to FY2001 Percent	Approps Reach Zeroin
Alabama	$11.54	$16.03	$18.04	$16.02	$14.31	$11.67	$15.69	$12.42	$14.73	$15.45	$13.02	$12.98	$13.08	$14.19	$12.54	$11.80	$11.33	$11.51	11.70	11.56	$-6.48	-35.9%	2062
Alaska	18.42	19.60	16.64	16.42	23.84	20.85	26.98	16.55	17.59	15.94	15.05	14.49	13.67	12.44	11.93	11.69	11.39	11.21	11.15	10.79	$-5.85	-35.2%	2021
Arizona	15.80	15.52	14.60	13.41	12.81	11.09	11.96	11.00	10.91	10.92	10.31	9.74	9.29	9.33	8.94	8.47	8.33	8.35	8.01	7.38	$-7.22	-49.5%	2028
Arkansas	10.24	11.76	11.81	13.00	11.05	9.87	12.99	10.63	10.29	10.28	11.49	11.87	10.93	10.80	10.95	10.51	10.86	11.25	11.70	10.96	$-0.85	-7.2%	2273
California	12.01	13.10	13.47	14.14	12.82	8.83	11.34	10.41	10.81	10.53	9.14	7.64	6.57	6.95	7.22	7.65	7.90	8.64	8.53	9.12	$-4.35	-32.3%	2026
Colorado	13.64	13.60	12.66	11.41	10.53	9.90	9.23	8.86	9.29	8.88	8.40	8.10	7.46	7.10	7.11	6.90	6.63	6.49	6.28	5.79	$-6.87	-54.3%	2024
Connecticut	7.40	6.76	8.26	7.68	7.12	6.15	6.32	6.55	6.22	6.08	6.01	5.68	5.56	5.46	5.28	5.18	5.21	5.33	5.67	5.53	$-2.73	-33.1%	2045
Delaware	11.18	11.50	10.91	10.71	11.69	10.64	10.90	10.67	9.91	9.84	9.03	8.65	8.23	9.03	8.80	7.88	7.72	8.10	7.89	8.04	$-2.87	-26.3%	2042
Florida	10.91	9.24	9.48	9.37	9.05	8.06	8.07	7.99	7.66	7.30	6.15	5.61	5.99	5.99	6.06	6.17	6.45	6.88	7.20	6.68	$-2.80	-29.5%	2038
Georgia	11.29	10.60	11.42	11.30	11.28	10.18	9.86	9.25	9.14	9.30	7.88	8.24	8.29	8.43	8.59	8.32	8.19	8.30	8.13	7.56	$-3.86	-33.8%	2045
Hawaii	12.74	17.25	16.80	15.95	15.83	15.17	15.40	16.10	15.90	14.49	14.17	14.21	14.70	14.09	11.97	12.03	11.59	10.48	10.95	10.27	$-6.53	-38.9%	2042
Idaho	14.78	16.57	16.34	13.58	12.47	10.94	12.06	12.37	12.46	13.24	12.70	12.09	11.42	11.77	11.38	11.26	10.52	10.77	10.78	10.16	$-6.18	-37.8%	2075
Illinois	9.45	9.00	9.34	8.76	8.28	7.73	8.27	7.40	8.21	7.85	7.42	7.18	7.07	7.19	7.10	7.15	7.08	7.25	7.32	7.11	$-2.23	-23.9%	2085
Indiana	9.32	10.73	10.42	9.93	9.81	8.89	9.43	9.75	9.82	9.93	9.59	9.28	8.81	8.44	8.37	8.29	8.27	8.44	8.56	8.28	$-2.14	-20.5%	2106
Iowa	9.65	12.77	13.77	13.10	12.51	11.88	11.25	11.60	12.09	13.12	11.77	12.45	11.94	12.44	11.80	11.96	11.68	11.88	12.03	11.53	$-2.24	-16.3%	2221
Kansas	10.47	12.73	13.39	12.91	11.78	10.88	10.89	10.10	11.31	11.07	9.91	10.19	9.78	9.99	9.90	9.48	9.44	9.64	9.45	9.62	$-3.77	-28.2%	2061
Kentucky	12.58	12.12	13.27	12.96	12.72	11.97	11.29	11.92	11.51	11.86	11.59	10.72	9.97	10.24	9.97	9.71	9.33	11.04	10.89	10.92	$-2.35	-17.7%	2083
Louisiana	12.54	11.55	12.03	12.39	12.76	10.26	11.87	10.21	9.65	10.35	9.38	9.70	8.34	8.27	7.81	7.84	8.49	8.39	9.47	8.83	$-3.20	-26.6%	2036
Maine	10.89	8.33	7.87	8.34	7.48	6.29	8.07	9.37	9.71	9.86	8.83	8.03	7.71	7.44	7.44	7.32	7.12	7.35	7.46	7.32	$-0.55	-7.0%	2395
Maryland	8.13	9.68	9.34	9.34	8.73	8.14	8.47	8.17	9.14	8.97	7.69	7.31	6.58	6.64	6.56	6.40	6.25	6.44	6.76	7.06	$-2.28	-24.4%	2045
Massachusetts	6.54	6.75	6.51	6.88	6.26	5.38	8.30	8.66	6.66	5.32	4.30	4.63	5.79	6.14	5.90	4.96	5.00	5.23	5.18	5.19	$-1.32	-20.3%	2055
Michigan	10.44	10.51	10.55	10.37	9.19	8.54	10.02	9.72	9.21	9.19	9.02	8.81	8.33	8.26	7.94	7.69	7.64	7.70	8.13	8.13	$-2.42	-22.9%	2076
Minnesota	9.71	14.20	13.88	14.53	12.96	13.07	13.11	12.82	13.19	13.38	12.11	11.39	11.02	10.86	10.50	9.88	9.88	10.08	9.80	9.23	$-4.65	-33.5%	2050
Mississippi	16.12	16.21	18.22	17.59	18.08	16.80	17.49	14.20	14.87	14.43	12.49	12.66	12.43	16.17	15.64	14.87	15.25	15.94	17.54	15.53	$-2.69	-14.8%	2132
Missouri	8.59	9.02	8.92	8.81	7.97	6.98	7.46	7.20	7.60	7.58	6.36	6.39	6.17	6.57	6.65	6.67	6.80	7.18	7.35	7.18	$-1.74	-19.5%	2083
Montana	11.33	11.62	11.81	11.42	12.43	12.73	12.45	10.87	10.57	10.28	10.81	9.93	8.73	7.74	8.04	7.88	7.50	7.50	7.77	7.19	$-4.62	-39.1%	2029
Nebraska	10.51	13.00	13.40	12.72	12.70	11.35	10.77	10.35	12.27	13.23	12.26	12.71	11.77	11.64	11.41	11.43	10.98	11.28	11.50	11.51	$-1.89	-14.1%	2258
Nevada	9.44	10.76	9.91	9.13	7.66	7.02	7.78	7.58	7.94	7.63	8.23	8.17	6.87	6.15	6.46	6.28	7.00	6.52	6.40	5.77	$-4.14	-41.8%	2058
New Hampshire	4.95	5.26	4.97	4.65	4.67	2.93	3.90	4.09	3.53	3.25	3.25	3.08	3.20	3.42	3.09	2.82	2.87	2.82	2.78	2.66	$-2.31	-46.5%	2031
New Jersey	6.73	6.41	6.33	6.23	5.76	5.31	7.31	7.14	6.73	5.74	5.87	5.91	5.93	5.98	6.24	5.89	5.40	5.57	5.51	5.68	$-0.65	-10.3%	2269
New Mexico	14.40	14.98	16.42	15.78	16.79	14.83	16.06	14.37	15.75	16.71	16.12	16.10	15.98	16.57	16.57	15.88	15.05	15.53	15.66	14.80	$-1.62	-9.9%	2971
New York	11.13	10.52	10.52	10.57	10.27	9.66	10.02	9.66	9.21	8.31	6.94	6.63	6.82	6.89	6.06	5.59	5.37	5.52	5.43	5.59	$-4.93	-46.9%	2019
No Carolina	14.93	15.11	15.91	15.82	16.00	15.23	16.13	16.30	15.71	14.86	13.34	13.58	13.25	13.28	12.71	12.20	12.34	12.62	12.60	11.96	$-3.95	-24.8%	2060
North Dakota	8.71	13.38	15.14	16.18	18.97	14.12	14.68	13.95	16.34	14.49	15.03	14.70	13.14	13.23	12.73	12.72	13.05	13.25	13.53	12.39	$-2.75	-18.2%	2088
Ohio	7.09	8.03	7.98	7.93	6.82	7.41	8.17	8.41	8.46	8.51	7.66	7.08	7.08	7.16	7.24	6.99	7.11	7.16	7.08	7.24	$-0.74	-9.3%	2204
Oklahoma	9.17	10.69	11.02	11.13	11.78	11.22	11.08	9.52	10.49	11.16	11.15	11.30	10.19	9.83	9.56	10.13	10.32	10.78	10.49	10.18	$-0.84	-7.6%	2182
Oregon	12.08	13.38	13.25	12.62	10.27	9.61	10.05	9.73	9.61	9.36	9.37	9.45	7.81	7.37	7.47	7.08	7.46	7.27	8.00	7.42	$-5.83	-44.0%	2033
Pennsylvania	8.17	9.39	8.46	8.12	7.36	5.83	7.26	6.94	6.99	6.84	6.67	6.01	6.18	6.18	6.14	5.81	5.74	5.75	5.82	5.83	$-2.63	-31.1%	2058
Rhode Island	9.99	11.97	10.48	10.23	9.50	9.16	8.95	8.88	8.62	7.88	6.15	6.16	5.62	5.90	5.86	5.51	5.71	5.90	5.67	5.53	$-4.95	-47.2%	2020
So Carolina	17.06	16.05	16.36	16.31	15.89	13.82	15.13	13.66	13.66	13.47	11.97	11.50	10.18	10.36	10.17	10.01	10.07	9.81	9.91	9.64	$-6.72	-41.1%	2027
South Dakota	9.98	11.41	11.09	10.54	9.64	7.81	7.93	8.85	9.46	9.34	8.85	9.24	9.22	8.78	8.26	8.30	7.88	8.05	7.95	7.32	$-3.77	-34.0%	2087
Tennessee	10.05	9.80	11.28	11.15	10.05	9.14	11.15	11.09	10.71	10.25	8.93	9.16	9.06	9.21	8.96	8.45	7.75	7.73	7.68	7.41	$-3.87	-34.3%	2054
Texas	9.44	13.33	11.94	13.08	13.99	12.84	10.97	9.92	10.68	9.67	9.90	9.37	9.85	9.01	9.05	8.00	8.35	7.67	8.28	7.58	$-4.36	-36.5%	2029
Utah	16.08	17.34	17.58	16.93	15.54	14.10	15.52	14.07	13.21	13.25	13.21	13.36	12.84	13.25	12.97	12.86	11.99	11.80	12.34	10.93	$-6.65	-37.8%	2048
Vermont	10.70	8.62	9.41	8.46	8.44	7.92	7.80	7.00	7.03	6.45	5.64	5.38	5.03	4.75	4.78	4.41	4.31	4.36	4.48	4.41	$-5.00	-53.1%	2017
Virginia	10.31	11.00	12.08	11.24	10.81	9.84	10.27	10.27	10.42	9.34	8.43	7.40	7.03	6.99	6.65	6.70	6.85	7.35	7.93	8.04	$-4.04	-33.4%	2029
Washington	13.15	14.00	13.81	14.59	11.66	11.01	10.59	10.13	10.32	10.00	9.74	9.31	8.81	8.24	8.33	8.33	7.92	7.73	7.75	7.65	$-6.16	-44.6%	2028
West Virginia	12.53	12.91	13.31	12.88	12.60	11.41	12.27	11.66	11.42	11.46	11.29	11.05	10.69	10.34	10.50	10.52	10.64	10.65	10.62	10.26	$-3.05	-22.9%	2086
Wisconsin	15.08	13.94	13.53	13.30	12.06	11.69	11.02	10.60	10.55	10.54	10.02	10.16	9.76	9.81	9.15	8.48	8.32	8.32	8.17	8.13	$-5.40	-39.9%	2035
Wyoming	14.67	14.74	15.31	14.12	16.04	16.64	17.65	17.61	17.81	17.54	16.93	15.69	14.74	13.87	13.34	13.60	13.02	12.88	12.51	12.32	$-2.99	-19.5%	2082
All States	**$10.36**	**$11.05**	**$11.22**	**$11.16**	**$10.64**	**$10.45**	**$10.22**	**$9.68**	**$9.74**	**$9.39**	**$8.62**	**$8.21**	**$7.96**	**$7.99**	**$7.88**	**$7.65**	**$7.65**	**$7.82**	**7.94**	**7.81**	**$-3.41**	**-30.4%**	**2042**

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educational opportunity. This is not always true, but quite often is.

Trends in State Effort

We study state higher education investment efforts over time in the same way we study the labor market demand for higher educated workers over time. The labor market's needs for college educated workers has been growing faster than production since about 1973. Thus the response from the states is more than perplexing.

Since FY1979--beginning in most states with state budget decisions made in the spring of 1979 and following immediately federal enactment of the Middle Income Student Assistance Act in the fall of 1978--state investment effort in higher education has been weakening. In all 50 states, state tax fund appropriations for higher education per $1000 of state personal income has declined since FY1979. As shown in the chart on page 14, the decline has been least in **Maine** (-7.0 percent), **Arkansas, Oklahoma, Ohio, New Mexico** and **New Jersey**.

But the decline has been far greater in other states. In **Colorado** and **Vermont** the state effort to support higher education has been reduced by more than half since FY1979. In other states the reduction has been more than $0 percent: **Arizona, Rhode Island, New York, New Hampshire, Washington, Oregon, Nevada** and **South Carolina**.

If the trends of the last two decades in reduced state support continue, all states will zero-out higher education in their budgets at some point in the future. This will occur first in **Vermont**, where the extrapolated trend line hits zero in 2017. **New York** hits zero in 2019, followed by **Rhode Island** in 2020, then **Alaska** in 2021, **Colorado** in 2024, **California** in 2026, **South Carolina** in 2027, **Arizona** and **Washington** in 2028, then **Montana, Texas** and **Virginia** in 2029.

Of course this will not happen? Or will it? Already **Vermont** and **Colorado** are more than half way to zero.

Higher educational opportunity costs money: for capacity, for quality and for affordability. The main revenue source for higher educational opportunity until recently has been state tax payers. As states have cut back on their investments in higher education, one or more of these dimensions of state responsibility have been sacrificed. We see evidence that all three have been sacrificed. And it is the most vulnerable among us that bear the burden of this lack of vision.

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Where the Guys Are Not: The Growing Gender Imbalance in College Degrees Awarded

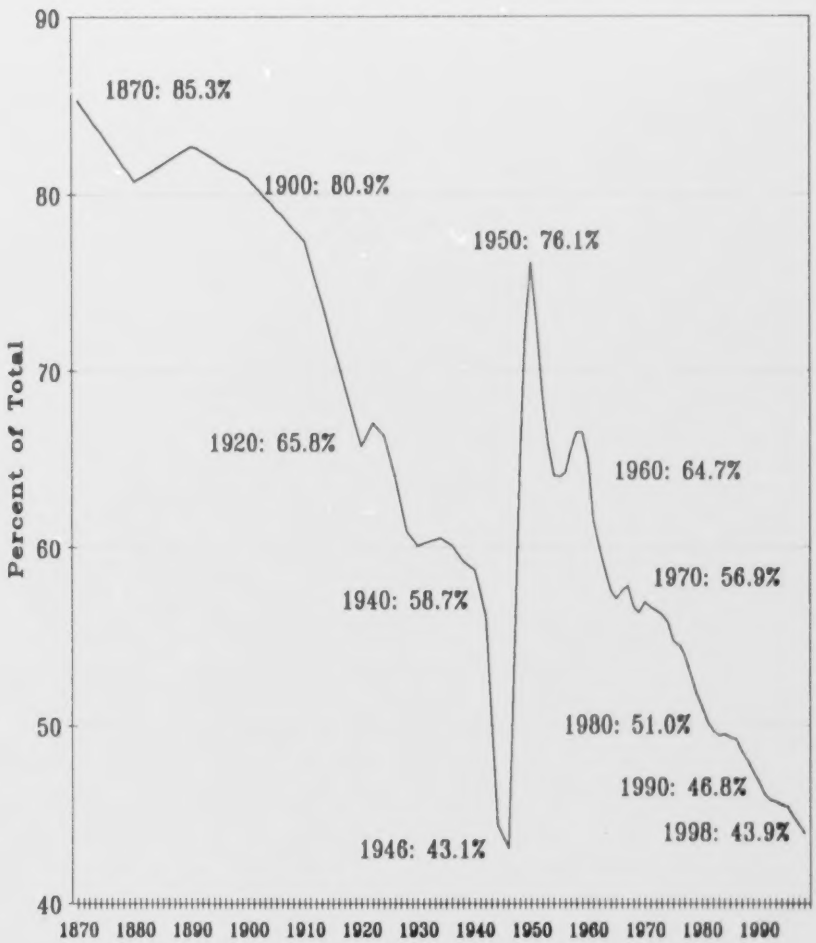
Although males are 51 percent of the college-age population, in 1997-98 they received just 43.9 percent of the bachelor's degrees awarded in the United States. This was the smallest proportion since 1946 when just 43.1 percent of the bachelor's degrees were awarded to males.

But we are not at war today. America's college-age men are here, not overseas. Compared to their sisters, young men are struggling to graduate from high school, struggling to continue their educations into college, and finally graduate from college. In a word, males are failing in the educational system. They are failing compared to women, compared to the needs of a college educated workforce, and they are most certainly failing to achieve the potential of their own lives.

Over the last three decades, males have moved from superior numbers compared to females at most points in the educational system, to sharply inferior numbers. The story that results from this change could be told in either of two ways: either the success of women, or the failure of men. In reality it is both. Women have made simply stunning progress throughout the educational system over the last 30 years. Men have not.

Because OPPORTUNITY tends to focus on the under-represented groups in higher education, we focus here on the plight of males. By any reasonable measure, males are in very serious trouble in the nation's educational system. In a world of escalating demand for college educated workers, that need has been met almost entirely by women. Men are stuck about where they were in the mid-1970s, in a time-warp, that leaves them oblivious to the growing educational needs of the labor market and the rich rewards for those who prepare through education to meet

Bachelor's Degrees Awarded to Males
1870 to 1998



those needs.

While women (and most men) rejoice in the deserved educational success of women, their welfare is also impacted by the poor educational performance of males.

- Many college-educated women will not find college-educated men to marry. When the college-educated women are ready to form their families, too many will then discover the dearth of marriageable men when it is too late to do anything about it. Black women have known this for decades. Women in all other racial and ethnic groups are headed towards the same place.
- Women with fathers, brothers, husbands and sons who are struggling in their lives will share in those struggles. The satisfaction many women derive from the success of their own careers may be compromised by the troubled lives of the males whose lives they share.
- Ultimately, with males disengaging from their traditional family, economic and civic roles, society faces a challenge about what to do with these disengaged males. The only answer our society has offered so far is to put a rapidly growing share of adult men behind bars.

Here we update and extend our analysis of data collected by the National Center for Education Statistics on the gender distribution of the academic degrees awarded by American colleges and universities. These data were first collected in 1870. The most recent data have been collected and partially published for 1998.

The data on college graduates tell stories of accumulated educational success or failure that spans decades. College degrees are awarded at the end of the education pipeline. They reflect experiences in school, at home and in neighborhoods accumulated between pre-school and college graduation. The very different numbers of college graduates for men and women at the time of college graduation reflect the very different experiences in the lives and educations of boys and girls when they were growing up.

The real story in these data is not the gender differences in college degrees studied here. The underlying message is in the different stories of girls and boys. We do not tell that story here--although we have offered our suggestions in the past. This story is far beyond the scope of this modest research letter. All we can do in these few pages is look at the end products of the experiences of children growing up. And the end products are very different for males and females. We ought to be asking why.

The Data

The main source of the data on college degree awards used here is the National Center for Education Statistics. The ancestors of the current NCES began collecting data on degrees awarded by American colleges and universities in 1870. Since the beginning these data have been collected by gender.

While annual data have been reported since 1870, in fact the reported data appear to have been interpolated from subsequent decennial surveys at a much later date-perhaps around 1970.

Data on earned college degrees is now reported in considerable detail by NCES in the Digest of Education Statistics and in annual Ed Tabs data reports. Both publications are available online at the NCES website at:

http://nces.ed.gov

Some of the historical data used here was reported in *Historical Statistics of*

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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the United States, Colonial Times to 1970, published by the Census Bureau in 1975 and still in print.

In this analysis we have expanded our previous reports on the gender distribution of bachelor degree awards to include all collegiate degrees: associate, bachelors, masters, doctorate and professional.

Trends

The shift in the distribution of bachelor's degrees between men and women since 1870 is shown in the chart on the first page. In 1870 85.3 percent of the bachelor's degrees were awarded to men. By 1998 this had dropped to 43.9 percent.

An important context for the interpretation of these data is the gender distribution in the American population. Beginning with vital statistics data on live births, each year there are 105 male babies born in the U.S. for each 100 female babies. This was the ratio in 1997--the most recent year--and this ratio has not fluctuated at all in the last four decades. Thus males are 51.2 percent of the live births in the U.S. and have been for 40 years at least.

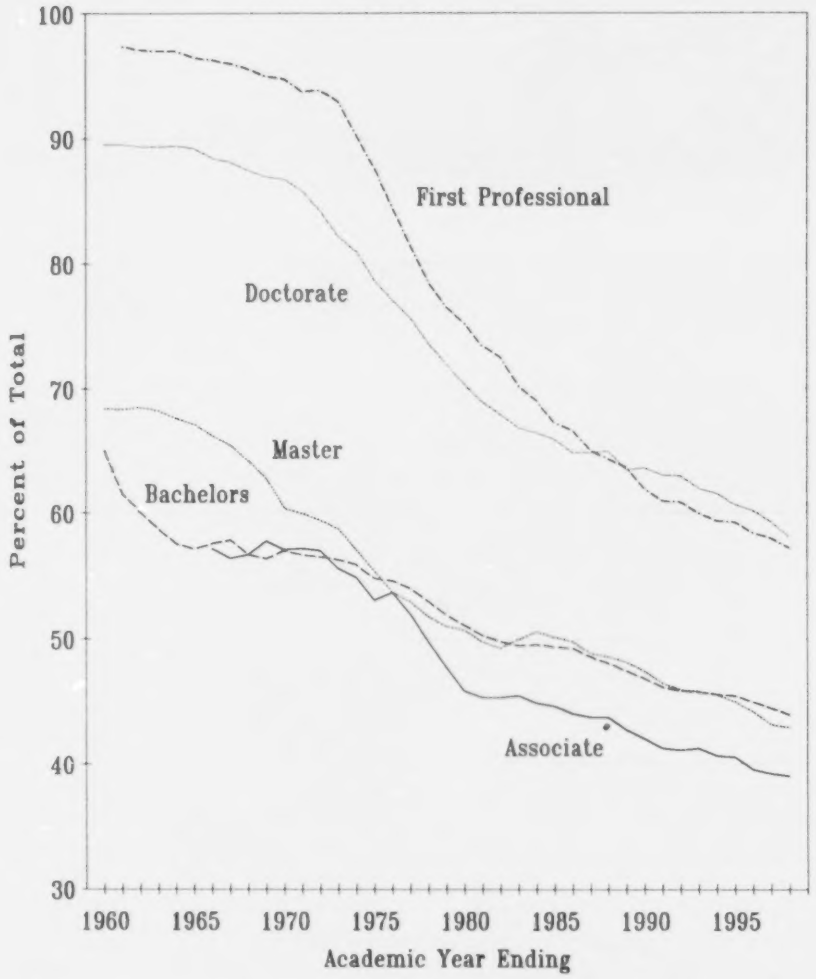
Males remain a majority of the population of young Americans through about age 24. As of November 1, 2000, the proportion of the population at each age group that was male was a s follows:

10 to 14 years	51.2%
15 to 19 years	51.4%
20 to 24 years	51.0%
25 to 29 years	49.8%
30 to 34 years	49.4%
35 to 39 years	49.7%

Higher male mortality leads to women becoming an ever growing share of the U.S. population after age 24.

Thus, the first control in the study of the gender imbalance in bachelor's degree awards begins with the population, where about 51 percent of college-age population is male. We have to look back to 1980 to find when the proportion of bachelor's degrees awarded to men was 51 percent-their share of the college age population.

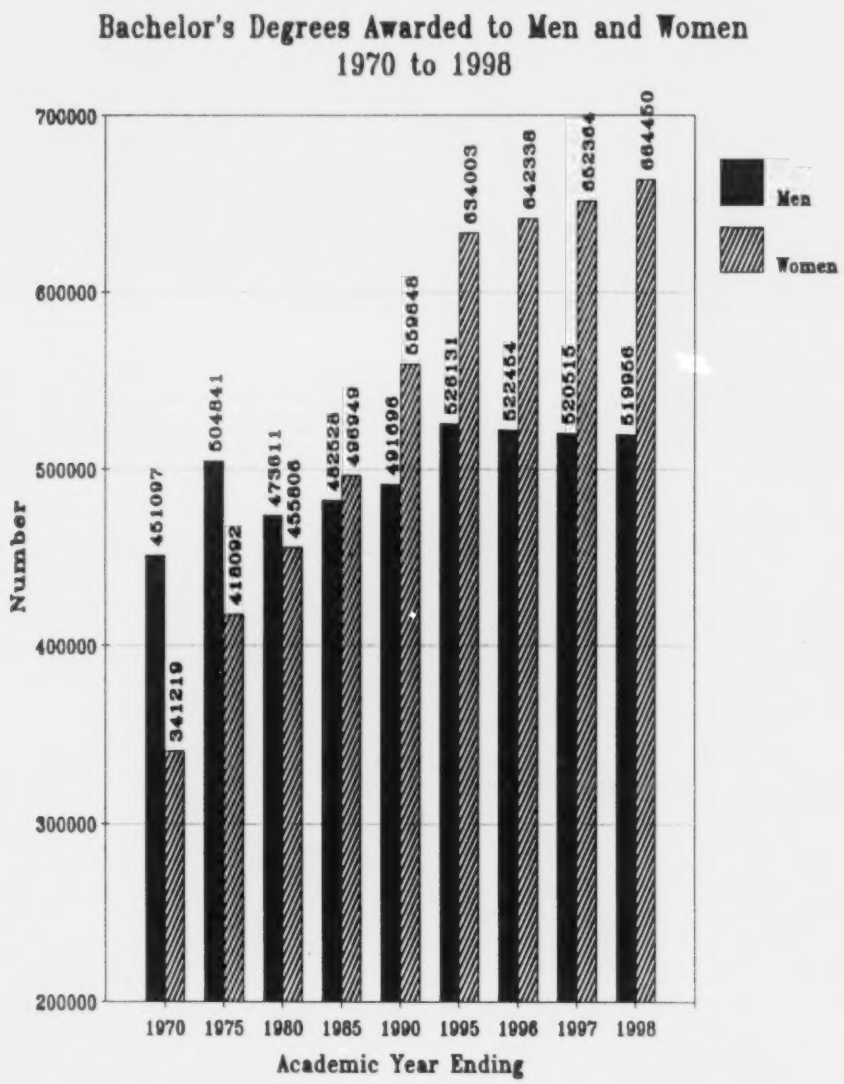
Degrees Awarded to Males by Level of Degree
1960 to 1998



World War II produced an extraordinary anomaly in the trend over time. Millions of young men that might have gone to college instead went into military service. Their absence from college campuses is apparent in the trend data. The proportion of bachelor's degrees awarded to men dropped to all time lows in 1945 and 1946.

But most of the young men returned from the War, and the Servicemen's Readjustment Act of 1944 (GI Bill), provided strong incentives for them to enroll in college rather than enter the workforce directly after their military service.

This disruption in long term trends spanned the years from 1940 to about 1970. Then, in about 1970, the trend between 1900 and 1940 resumed and has persisted ever since.



Degree Levels

The chart on page 3 shows the proportion of all collegiate degrees awarded to males between 1960 and 1998. Over the last four decades, the gender shift is apparent at every collegiate degree level:

- At the associate degree level, the proportion of degrees awarded to men declined by 18.1 percent, from 57.1 percent in 1966 to 39.0 percent in 1998.
- At the bachelor's degree level, the proportion of degrees awarded to males declined by 21.1 percent, from 64.7 to 43.9 percent.
- At the master's degree level, the male share declined by 25.5 percent, from 68.4 to 42.9 percent.
- At the professional degree level, the male share declined by 40.2 percent, from 97.3 percent in 1961 to 57.1 percent in 1998.
- At the doctorate degree level, the portion of degrees awarded to men declined by 31.5 percent, from 89.5 percent in 1960 to 58.0 percent by 1998.

Clearly, the gender shift in higher education is occurring at all levels of enrollment. The shift has occurred earliest at the associate degree level. The largest shift has occurred at the first professional degree level.

The gender shift from majority male to majority female has not yet occurred at the highest degree levels. But the trends are clear and it is only a matter of time before most professional and doctorate degrees are awarded to women also.

Numbers of Degrees

The extraordinary progress of women, and near total absence of progress for men, in the receipt of earned bachelor's degrees from college is apparent in the chart on this page. Especially since 1975 nearly all of the growth in bachelor's degrees awarded in the U.S. has been earned by women.

- Between 1975 and 1998 the number of bachelor's degrees awarded to females increased from 418,092 to 664,450, or by 246,358 or by 59 percent.
- By contrast, the numbers of bachelors degrees awarded to males increased from 504,841 to 519,956, or by 15,115 or by 3 percent.

In effect, 94 percent of the growth in the number of bachelor's degrees between 1975 and 1998 was earned by females. Just 6 percent was earned by males.

In more recent years the shift has been even more dramatic. The number of bachelor's degrees awarded to males peaked in 1993 at 532,881 has declined every year since to 519,956 in 1998, a decline of 2.4 percent. During this same five year period, the number of bachelor's degrees awarded to females increased from 632,297 to 664,450, an increase of 5.1 percent.

The National Center for Education Statistics has projected the numbers of

bachelor's degrees by gender to be awarded through 2009-10. NCES projects the numbers for males to increase by 5.2 percent, and for females by 16.8 percent. Our review of past NCES projections suggests that NCES has tended to over-project males and under-project female bachelor degree awards.

Race/Ethnicity

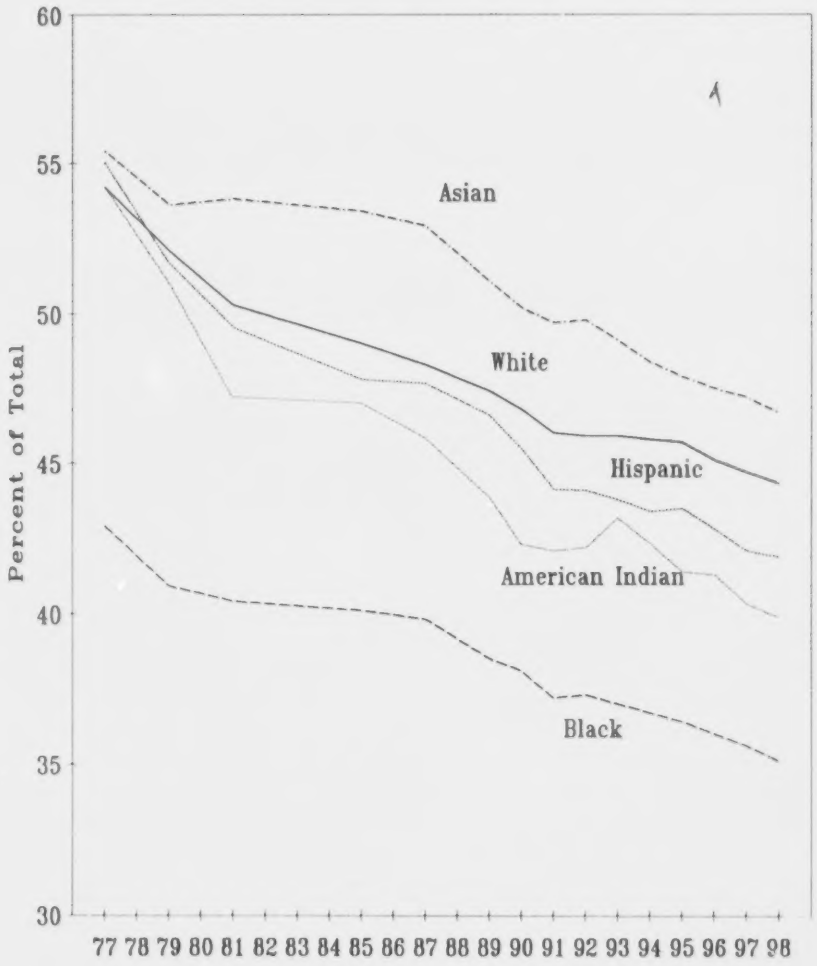
Between 1977 and 1998 the proportion of bachelor's degrees awarded to males declined in each and every racial/ethnic group of the population.

One group stands out from the others in this analysis: blacks. Here black males have received a minority of the bachelor's degrees awarded to blacks for as long as NCES has collected and reported these data. In 1977 42.9 percent of the bachelor's degrees awarded to blacks went to males, and by 1998 this had dropped to a record low of 35.1 percent, a decline of 7.8 percentage points. Far more than any other racial/ethnic group, black males have been less successful compared to black females at completing bachelor's degrees.

But the declines in the proportion of bachelor's degrees awarded to males have been larger in all of the other racial/ethnic groups. Between 1987 and 1999, the proportion of bachelor's degrees awarded to males:

- White non-Hispanic: declined from 54.2 to 44.3 percent, a decline of 9.9 percent. The cross-over year from majority male to majority female occurred about 1981.
- Hispanic: declined from 55.0 to 41.9 percent, a decline of 13.1 percent. The cross-over year was about 1980.
- Asian/Pacific Islander: declined from 55.4 percent in 1977 to 46.7 percent in 1998, a decline of 8.7 percentage points. The cross-over year occurred last here, in 1991.
- American Indian/Alaskan Native: declined from 54.2 to 39.9 percent, a decline of 14.3 percent. The cross-over year from majority male to majority females occurred about 1980.

Bachelor's Degrees Awarded to Males by Race/Ethnicity
1977 to 1998

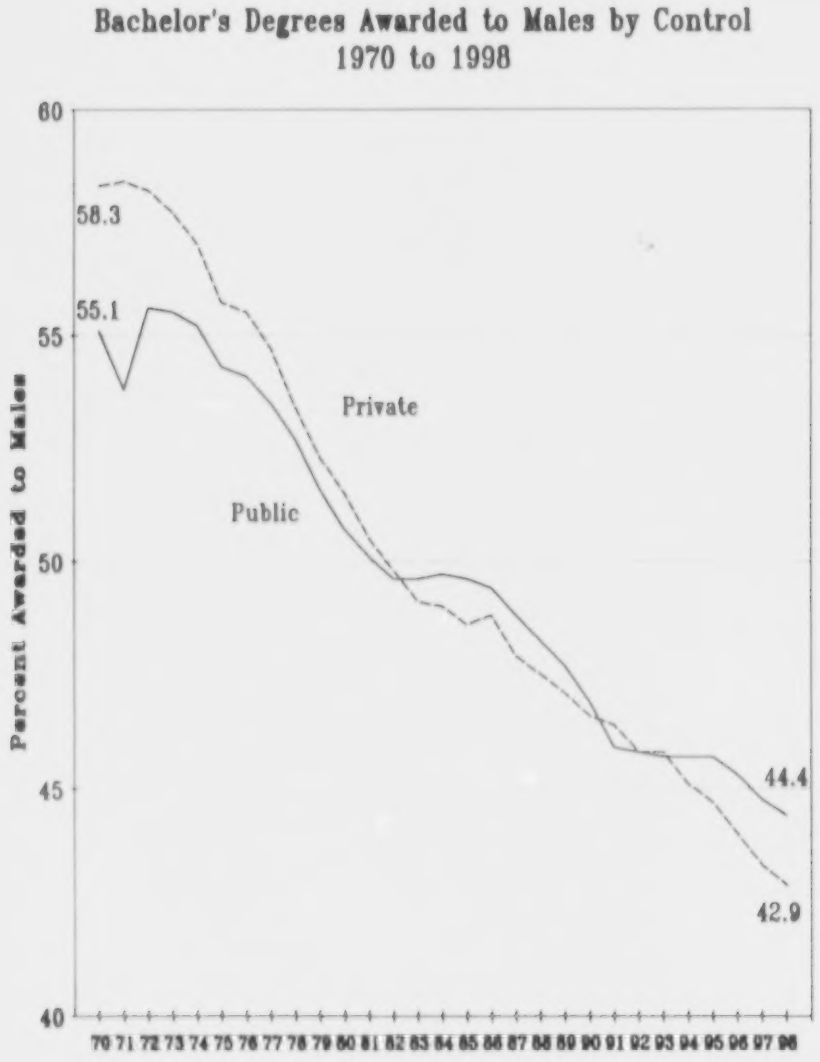


The major finding in these data is that the gender shift in bachelor's degree awards has occurred in all racial/ethnic groups of the population. The shift occurred earliest among blacks and last among Asians. The shift between 1987 and 1998 has been greatest among American Indians and least among blacks. There survives no racial/ethnic refuge from progress of women, and lack thereof among men.

Institutional Control

The gender shift in bachelor's degrees awarded has occurred in both public and private higher education in the United States. The shift has been greater in private institutions than in the publics, but both shifts occurred at about the same time.

Public colleges and universities award about 66 percent of the bachelor's degrees in the United States. In 1998 they awarded 784,296 bachelor's



degrees, out of the 1,184,425 awarded by all institutions participating in federal Title IV student financial aid programs. Out of this total, 348,462, or 44.4 percent were awarded to males. But back in 1970, 55.1 percent of the bachelor's degrees awarded by public colleges and universities were awarded to males. The dropoff in the male share was 10.7 percentage points.

In 1998 private institutions awarded 400,129 bachelor's degrees. 386,472 were awarded by non-profit institutions, and the remaining 13,657 were awarded by for-profit businesses. Of the total awarded, 171,5000 were awarded to men, or 42.9 percent. In 1970 58.3 percent of the bachelor's degrees awarded by private institutions were awarded to men. Between 1970 and 1998 the male share declined 15.4 percentage points.

Clearly the gender shift has been greater in private institutions than in the publics. Perhaps that is why private colleges have shown more interest and concern than have public institutions.

- In November of 1999 Goucher College in Baltimore sponsored the first national conference devoted to the subject: *Fewer Men on Campus: A Puzzle for Liberal Arts Colleges and Universities.*
- In April of 2001 Morehouse College in Atlanta will sponsor a national symposium on *Reconnecting Males to Liberal Education: A Consideration of Strategies to Engage Males in Higher Education.* For more information go to: http://www.morehousesymposium.com.

Study Fields

A version of the gender shift has occurred in all major academic fields of study that have been dominated by males in the past.

The first example of this has been **business**. In 1970 91.3 percent of the bachelor's degrees went to males. By 1998 this had dropped to 51.5 percent, or very close to the male share of the college-age population. Most of this decline occurred between 1972 (90.5 percent) and 1987 (53.5 percent). Expressed another way, the number of bachelor's degrees awarded to males increased by 23,723 between 1970 and 1998, and increased by 103,816 for females during this same period.

Other fields with dramatic gender shifts have been **agriculture** (-36.5 percent share loss to males), **architecture** (-29.8 percent), **psychology** (-31.0 percent), **biology/life sciences** (-25.4 percent), **physical sciences** (-24.8 percent) and **communications** (-24.8 percent).

Only in **foreign languages/literature** and **visual/performing arts** did the share of bachelor's degrees awarded to males increase, and here by less than 4 percent between 1970 and 1998.

In major fields like **mathematics, social science/history, business,** and

biology/life sciences, men and women earn bachelor degrees in roughly equal numbers.

Interestingly, there are no traditionally female fields of study that have attracted a large numbers of males. All of the gender shifts by fields of study are the result of many more women entering traditional male fields--not the reverse.

States

Our final unit of analysis of the redistribution of college degrees by gender is the state. Here we are talking geography. And the breadth of the phenomenon we have been describing becomes most apparent here.

Remembering that males are about 51 percent of the college-age population, in 1998:

- A majority of the associate's degrees were awarded to females in every one of the 50 states plus the District of Columbia.
- A majority of the bachelor's degrees were awarded to females in every state plus DC.
- A majority of the master's degrees were awarded to women in every state and DC except **Utah**.

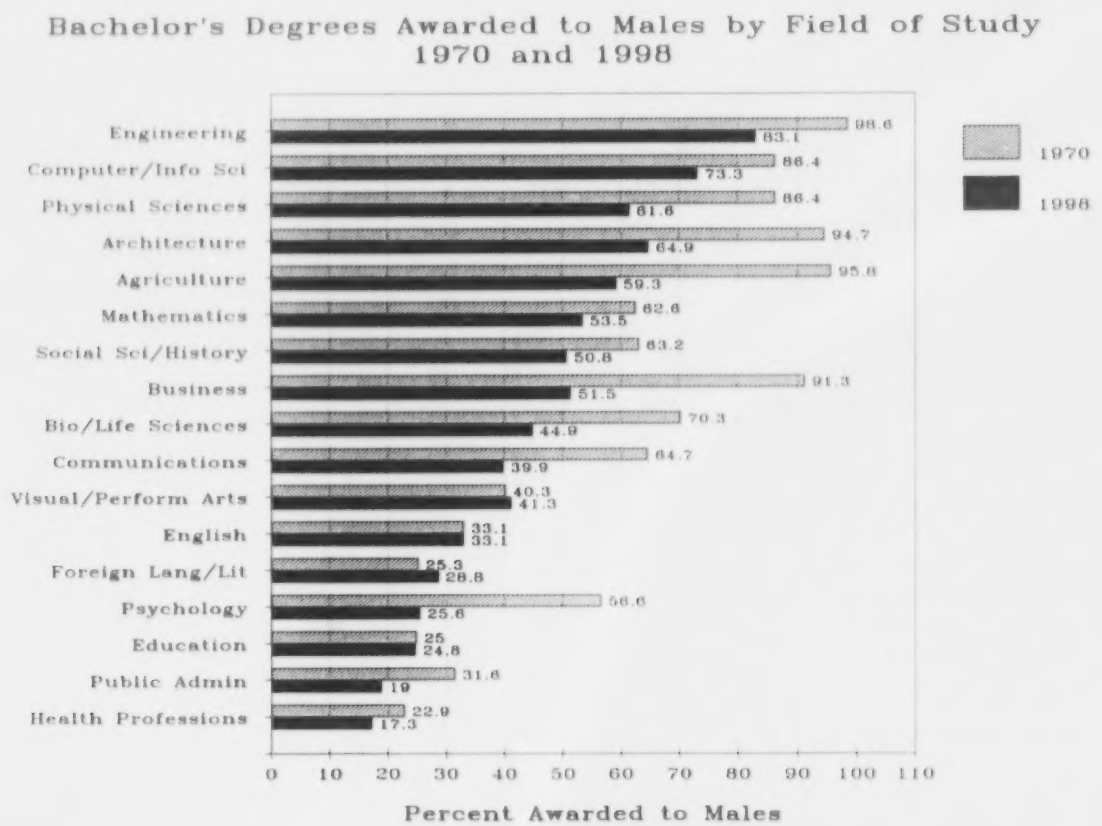
Only at the level of the doctorate degree were more degrees awarded to men than women--except in five states.

Associate degrees. In 1997-98 there were 558,555 associate's degrees awarded by Title IV participating, degree-granting institutions in the United States. 217,613 went to men and 340,942 were awarded to women. Men earned 39.0 percent of these degrees.

Across the states, the range was from a low of 29.0 percent in **Kentucky** to a high of 49.97 percent in **Rhode Island**. Only Rhode Island and **Nebraska** were close to 50 percent male. At the other extreme, besides Kentucky, less than a third of the associate's degrees were awarded to males in **Louisiana, Arkansas, Delaware** and **Maine**.

Bachelor's degrees. Of the 1,184,406 baccalaureate degrees awarded in 1997-98, 519,956 went to men and 664,450 were awarded to women. Males received 43.9 percent of the total. Women earned 144,494 more bachelor's degrees than did men.

In 1998, for the first time in history, a majority of the bachelor's degrees were awarded to women in every state. In 1997 **Utah** was the last state to award a majority of its bachelor's degrees to males. In 1998 Utah awarded 8,316 to men and 8,354 to



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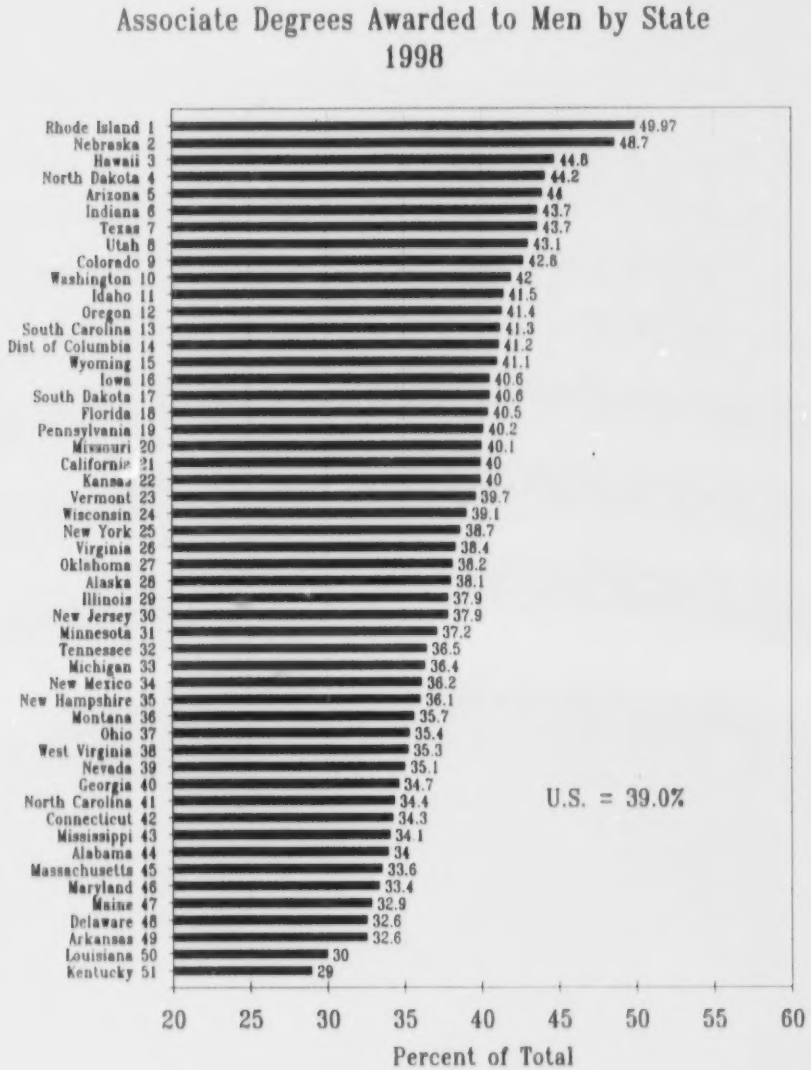


women. The other states with the largest male shares of bachelor's degrees were also western states: **Montana** (47.7 percent), **Colorado** (47.3 percent), **Arizona** (46.7 percent) and **North Dakota** (46.5 percent).

Alaska colleges and universities awarded the smallest share of its bachelor's degrees to men--39.8 percent in 1998. Other states awarding less than 42 percent of their bachelor's degrees to men were **Louisiana** and **Mississippi** (41.1 percent), **Delaware** (41.3 percent), **District of Columbia** (41.5 percent), and **Georgia, South Carolina** and **New Mexico** (41.7 percent).

In this respect these states may be viewed as experimental labs for the gender-redistribution revolution. The consequences--if any--for the redistribution in higher educational enrollment and degrees awarded should become apparent in these states before other lagging states are faced with the issues that may arise.

In 1970 a majority of the bachelor's degrees were awarded to males in every one of the 50 states and DC. By 1998 this had completely reversed. The gender revolution in bachelor degree awards is now complete in every corner of the U.S.

Master's degrees. In 1997-98 there were 430,164 master's degrees awarded in the U.S. Of these 184,375 went to males and 245,789 went to females. Most master's degrees have gone to women since the mid 1980s.

In the states, a majority of the master's degrees awarded in 1998 went to women in ever state except one--**Utah**. The range was from 31.9 percent to men in **Vermont** to 56.3 percent in **Utah.**

Utah stands out in all higher education gender studies of enrollment and degree awards. Apparently its distinctive Mormon religion and resulting culture influence higher education participation for men and women and ways that are quite different from the rest of the country. Outside of Utah, in the other states where the Mormon culture is significant, genders are more equal.

Doctor's degrees. In 1997-98 there were 46,010 doctorate's awarded in the U.S. 26,664 went to men and 19,346 went to women. Men received more doctor's degrees than women in all but five states. Women received more doctorates than men in **Maine, Nebraska, South Dakota** and **Vermont**. Men and women received equal numbers of doctorates in the **District of Columbia**.

Discussion

This analysis of data on the gender distribution of bachelor's degrees awarded in the United States has sought to make two main points.

First, the redistribution of bachelor's degrees from men to women has been

underway for a very long time, at least 130 years. The period between 1940 and 1970 appears to have been an anomaly in this trend caused by World War II. About 1970, the trend from the first four decades of the twentieth century merely resumed--it was not a new phenomenon.

This trend up to 1980 was an important correction that brought women into a parity relationship with men. Where men and women are about equally distributed in the population, the distribution of bachelor's degrees that represents the gender distribution in the college-age population was reached in 1980.

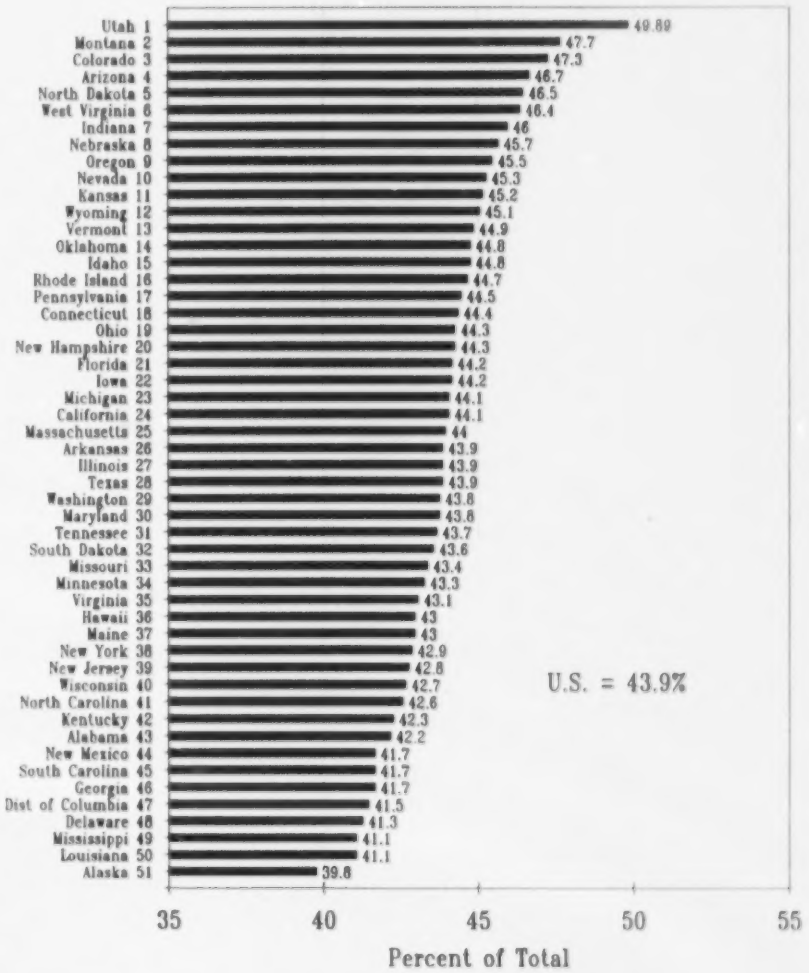
Since 1980 the redistribution of bachelor's degrees across the genders has continued, creating an imbalance in the opposite direction. No longer may the trend of the last two decades be called a correction. Women are earning--and we stress earning and deserving--the gains in bachelor's degree attainment achieved since 1980.

Second, the redistribution of bachelor's degrees from males to females has been very broadly based. This redistribution has occurred in all 50 states, in all racial/ethnic groups of the population, and in both public and private higher educational institutions. In all fields traditionally dominated by men, women have made substantial gains over the last 30 years. We think it safe to say that there are no remaining male reserves in bachelor degree awards, although engineering and computer science seem to be struggling to hold on to their historic male dominance.

Why?

The depth and breadth of the gender shift in bachelor's degree awards must certainly lead us to ask: Why? What is happening? We think we see some of the answers more clearly than we do others.

Bachelor's Degrees Awarded to Men by State 1998



Labor market shifts. First, the United States has been moving swiftly into the human capital economy for the last three decades, since the early 1970s. The proportion of jobs in goods-producing industries--which are historically dominated by men by a three-to-one margin--has been shrinking since World War II. In 1943 goods-producing industries employed 47.4 percent of all workers. By 1999 this had shrunk to 19.8 percent of employment. Particularly hard-hit was manufacturing, which shrank from 41.5 to 14.4 percent during this period. This shrinkage documents the demise of the high wage-low skill labor market.

What has displaced goods-producing industrial employment is private service-producing industries. These jobs have grown from less than 40 percent of U.S. employment during World War II to 64.6 percent of jobs in 1999. These are jobs now dominated by women.

What this industrial shift means is that those with postsecondary education or training (and more the better) are getting the better paying jobs available

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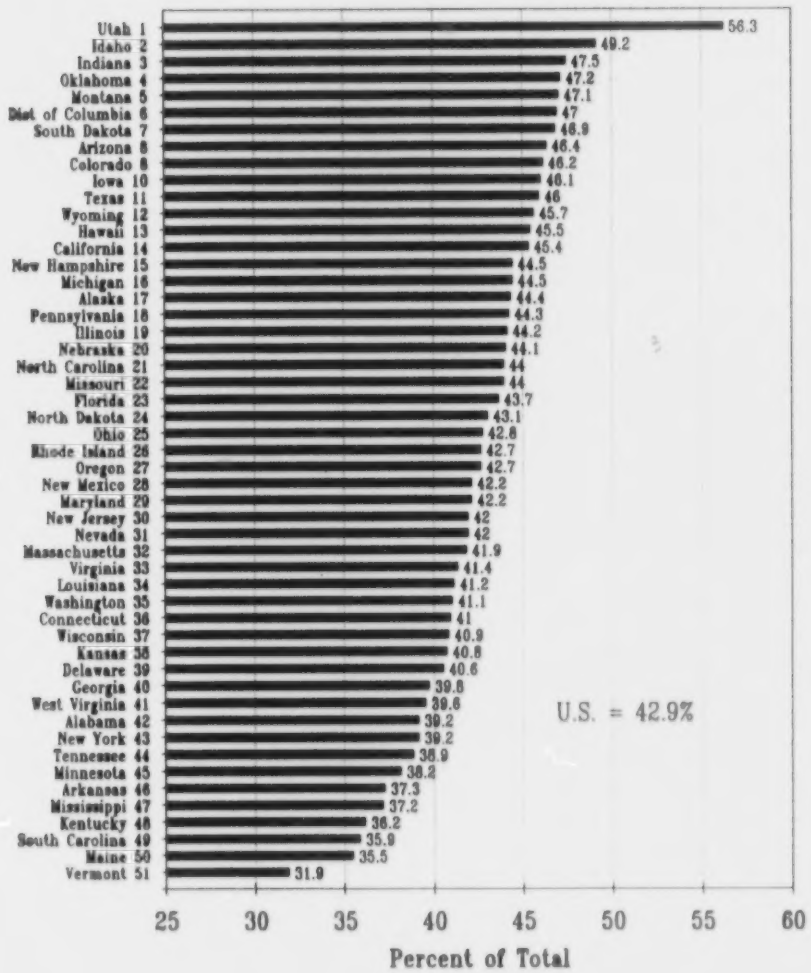
Master's Degrees Awarded to Men by State 1998



in the economy. The income differential between college educated men and high school educated men is much greater than it is for women. On average a college educated male will earn back in income $30 to $35 in increased income for every dollar he spends on tuition, fees, room and board for four years at a public college or university. Despite this huge return on a college education investment, there are about as many men earning bachelor's degrees today as there were in 1975.

Men just don't seem to be getting it. And women *do* seem to be getting it.

Urbanization. The population of the United States has been concentrating in urban places ever since the first Census in 1790. At that time just 5.1 percent of us lived in urban areas. By the 1990 Census--200 years later--75.1 percent of us lived in urban areas.

Urbanization obviously brings us closer together, where social networking and communications skills are at an advantage. Our activities also change as we urbanize--we no longer put a crop in the ground in the spring and later harvest the crop in the fall.

We find it difficult to believe that men and women are living on the same planet. Women are aggressively responding to the huge economic incentives of college education, and men are not. We ask why.

As we stated at the beginning of this analysis, looking only at the gender distribution of bachelor's degrees gives us only a glimpse of the iceberg. Bachelor's degrees are awarded after more than two decades of childhood experiences in school, at home and in neighborhoods. There are twenty some years into which we must probe for answers for the question Why?

For those willing to search beyond the meaningless palliatives of affirmative action for males in college admission and building up campus sports programs to attract more males, the solutions should be sought at the global scale of a changing world.

We are urbanizing, and we have shifted from a good-producing economy to a service-producing economy. These two changes alone offer relative advantages to women that put men at a disadvantage unparalleled in history. Men are no longer needed to fight off the saber toothed tiger at the mouth of the cave. Men are no longer needed to plant a crop in the spring and harvest it in the fall. Men are no longer needed to pour molten steel and operate heavy manufacturing equipment. And maybe we will not need men to fight wars anymore.

What we will need are well educated and trained workers, with superior teamwork and communications skills, able to read and carry out complex instructions. We need more people whose minds deal with information in a concurrent, multi-tasking process. These are minds of women, not men.

The ultimate question is: What is the future of the male gender? Men's past roles, based on their strength and aggressiveness, are no longer needed in the human capital economy. Men are not adapting--if indeed they can. It is not possible to send the men back to Mars and reserve Earth for the Venusians.

It is probably no coincidence that the prison population of the United States began its explosive growth about 1975. We take this as one indication of our country's inability to effectively address the preparation of young men for responsible, productive, contributing social roles. The social pathologies of this failure spread to the women and children who share the failed lives of these men.

Higher education has the resources to study the *causes* of the problem, from which effective *remedies* should logically follow. Unless and until we do this, the preceding data will continue to worsen for men, and ultimately for women as well. Our welfare is not individual, it is common, and since we are all on this planet mixed together--as we were intended to be--the efforts to study and remedy must involve us all.

* * * * *

The Morehouse Symposium

A major national conference on the problem of missing males in higher education will be held at Morehouse College in Atlanta, GA, on April 5 and 6. Because the conference registration deadline is March 15, those interested in attending should make immediate plans.

Information on and registration for the Conference is available from the conference website:
http://www.morehousesymposium.com

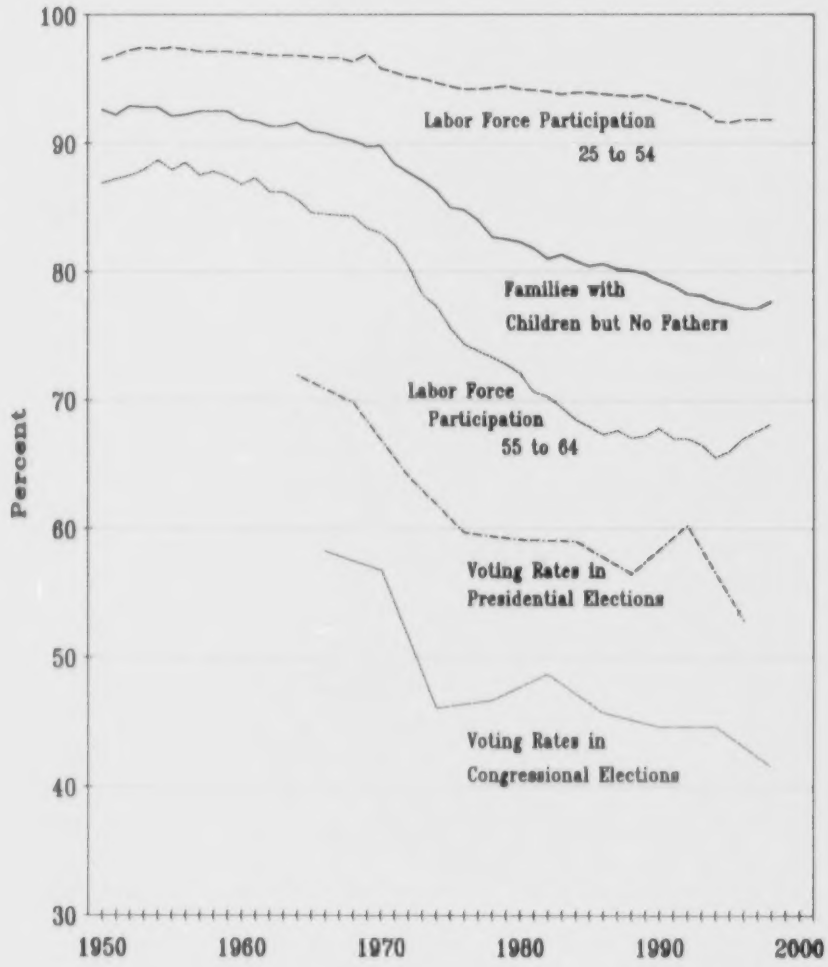
Additional information is available by calling Langhum Mitchell Communications at 202/546-9170, or by e-mail to langhummitchell.com.

The conference title is: "Reconnecting Males to Liberal Education: A Consideration of Strategies to Engage Males in Higher Education."

Materials that we have developed to describe the issue in considerably greater detail than that shown here will be presented at the Morehouse conference. Other scholars and writers will be presenting their research on the subject. The conference schedule, themes and speakers are noted on the website.

It is our view that the approach taken by the Morehouse symposium planners--to gather the academic expertise of higher education to study the issues--is a potentially more productive approach than discussions about admissions strategies. Moreover, since the gender issue has been a serious problem for blacks far longer than it has been for any other group, we applaud the leadership shown by Morehouse in convening this conference.

Adult Male Disengagement Measures
1950 to 2000



Financial Need:
Need, Remaining Need, Unmet Need and Overmet Need

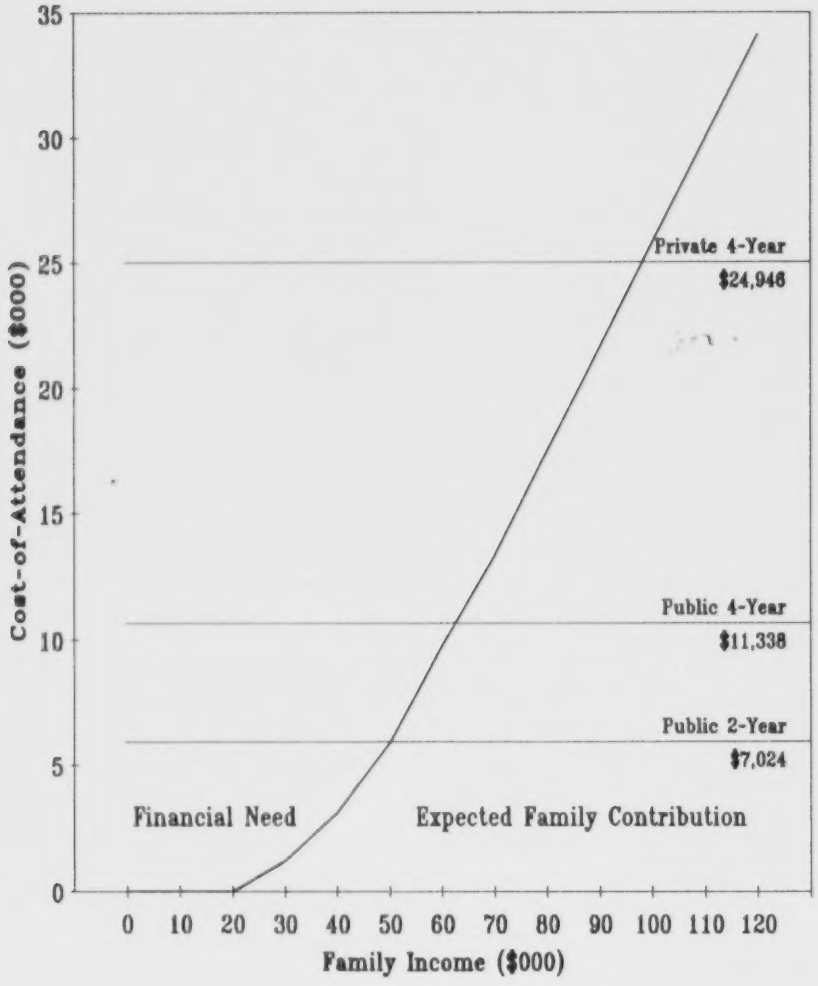
Helping students with financial needs to pay for their college educations has a long history in American higher education dating back to the earliest years of Harvard.

However, this history and its rationale is one many federal, state and institutional policy makers are too conveniently forgetting. Simply put, those with financial need are a) least likely to vote and b) do not always present strong academic credentials.

Thus, recent policy initiatives--merit scholarships, tax credits, tax favored college savings--appear to have substituted electoral and institutional ego needs for financial need as their justifications.

Here we briefly review the financial needs of students: need, remaining need, unmet need and overmet need.

Financial Need Model for Dependent Undergraduate
2000-2001 Award Year



These needs are measured using recent empirical studies. The meaning of these terms as we use them here are as follows:

	College attendance costs
less	Expected family contribution
equals	Need
less	Grant assistance
equals	Remaining need
less	Self-help aid (loans, CWS)
equals	Unmet need
less	Off-campus job earnings
equals	Really unmet need

Defining Financial Need

The contemporary definition of financial need follows the following formula:

	Cost of attendance
less	Family contribution
equals	Financial need

This formula is now contained in federal law under Part F of Title IV of the Higher Education Act of 1965.

Cost of attendance includes tuition and fees; an allowance for books, supplies, transportation and miscellaneous personal expenses; and an allowance for room and board costs incurred by the student. Federal law allows for various other attendance costs in special circumstances, such as day care for dependent children, costs associated with study abroad, disability-related expenses and costs associated with work experience under cooperative education programs.

Family contribution is "the amount which the student and the student's family may be reasonably expected to contribute toward the student's postsecondary education" according to federal law. The components of this determination are available income, family size, number of children

Unmet/Remaining/Overmet Financial Need for Aided Dependent Undergraduate Students by Family Income

	Family Income ($000)										
	LT 10K	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	GT 100
NPSAS96[1]											
All	3,040	3,353	3,000	2,618	1,104	-196	-2,566	-4,021	-5,641		-14,232
Public 4-yr	2,573	2,759	2,439	1,838	345	-1,132	-3,277	-5,676	-7,625		-17,308
Priv 4-year	3,548	4,665	3,967	3,988	2,648	1,636	-154	-1,258	-3,389		-11,618
Public 2-yr	2,526	2,408	2,496	1,894	-407	-1,837	-7,540	-5,236	-6,450		-11,431
New Mex98[2]											
All	5,735	3,160	3,085	2,592	1,458	-758	-2,583	-4,912	-6,721	-11,596	-22,009
Colorado98[3]											
All	4,828	3,343	3,272	2,501	1,537	-39	-2,343	-4,252	-6,682	-10,493	-16,035
Florida99[4]											
State Univ											
Resident	7,525	7,163	6,253	4,583	2,967	482	-2,002	-5,039	-16,586		
Commuter	4,025	3,663	2,753	1,083	-534	-3,018	-5,502	-8,539	-20,086		
Comm Coll											
Resident	7,819	7,359	6,225	5,378	3,325	1,042	-1,281	-3,441	-10,637		
Commuter	4,319	3,859	2,725	1,878	-175	-2,458	-4,781	-6,941	-14,137		

	Bottom Quintile	Second Quintile	Third Quintile
Illinois[5]			
Comm Coll:			
FY1987	994	766	1,057
FY1992	1,330	780	600
FY1997	867	1,587	264
FY2000	499	1,175	-354
Public Univ:			
FY1987	1,302	1,824	2,584
FY1992	1,791	1,931	2,879
FY1997	2,564	3,293	4,220
FY2000	2,789	3,770	4,491
Private Inst:			
FY1987	5,434	5,956	5,456
FY1992	9,037	9,177	8,021
FY1997	12,581	12,531	10,606
FY2000	15,006	15,006	12,577

[1]Unmet need for full-time, full-year (9 month), same institution.
[2]Unmet need for full-time, full-year (9 month), New Mexico residents.
[3]Unmet need for full-time, full-year (9 month), in-state students.
[4]Remaining need is COA less EFC less Bright Futures Scholarship.
[5]Remaining need after EFC, Pell and Illinois MAP Grant.

Unmet/Remaining/Overmet Financial Need for Aided Independent Undergraduate Students by Family Income

	Family Income ($000)					
	LT 5K	5-10	10-20	20-30	30-50	GT 50
NPSAS96[1]						
All	4,164	4,035	3,617	2,991	-366	-9,661
Public 4-year	2,875	2,626	2,086	1,513	-1,442	-9,953
Private 4-year	4,873	5,121	4,818	4,869	205	-7,612
Public 2-year	3,666	3,868	3,375	2,366	-1,561	-13,680
New Mexico98[2]						
All	3,619		3,601	3,115	2,723 687	-2,934
Colorado98[3]						
All	5,473		5,580	5,756	5,180 3,511	-1,031

[1]Unmet need for full-time, full-year (9 month), same institution.
[2]Unmet need for full-time, full-year (9 month), New Mexico residents.
[3]Unmet need for full-time, full-year (9 month), in-state students.

enrolled in college, net assets, marital status of the student, age of older parent and employment-related expenses. The expected family contribution adds, subtracts and divides these components to calculate each applicant family's expected family contribution. This measures ability, not willingness, to pay for higher education.

Financial need for each aid applicant is the difference between cost of attendance and expected family contribution. Financial need is addressed through a package of gift aid (grants, scholarships, waivers) and self-help aid (educational loans, earnings from campus employment). What is left over is unmet financial need. It is left up to the student to figure out how deal with this residual. Most do so by working term-time off-campus, enrolling part-time and/or switching to another, less expensive institution.

Distribution of Financial Need

Cost of attendance information is collected annually by The College Board, and published in *Trends in College Pricing*. National average costs of attendance for full-time undergraduates for the current 2000-01 academic year are:

Public 2-year:	
commuter	$7,024
Private 2-year:	
resident	$14,679
commuter	$12,219
Public 4-year:	
resident	$11,338
commuter	$9,229
out-of-state	$16,848
Private 4-year:	
resident	$24,946
commuter	$21,704

Expected family contribution is calculated under the formula specified in federal statute. We have derived the following EFCs for a family of 4, with one child in college, from the estimator on the FinAid website at:

http://www.finaid.org/calculators/finaidestimate.phtml

Family Income	Expected Family Contribution
$0	$0
$10,000	$0
$20,000	$0
$30,000	$1,224
$40,000	$3,117
$50,000	$5,905
$60,000	$9,742
$70,000	$13,301
$80,000	$17,463
$90,000	$21,625
$100,000	$25,787
$110,000	$29,949
$120,000	$34,110

In this respect, the EFC functions somewhat like a progressive income tax: the more you have the more you are expected to pay.

Financial need is simply the difference between cost-of-attendance and expected family contribution. For example, at a public 4-year institution students living on-campus would have the following financial needs at different income levels:

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Family Income	COA	less EFC	equals Need
$0	$11,338	$0	$11,338
$10,000	$11,338	$0	$11,338
$20,000	$11,338	$0	$11,338
$30,000	$11,338	$1,224	$10,114
$40,000	$11,338	$3,117	$8,221
$50,000	$11,338	$5,905	$5,433
$60,000	$11,338	$9,742	$1,596
$70,000	$11,338	$13,301	-$1,963
$80,000	$11,338	$17,463	-$6,125
$90,000	$11,338	$21,625	-$10,287
$100,000	$11,338	$25,787	-$14,449
$110,000	$11,338	$29,949	-$18,611
$120,000	$11,338	$34,110	-$22,772

In this example, students and their families have financial need for assistance to pay college attendance costs only up to about $65,000 of family income. Above that income the expected family contribution from federal need analysis exceeds cost-of-attendance. These students and their families have no need for financial aid to attend college.

Financial Aid to Finance Need

Where financial need is indicated, financial aid is provided. This provision begins with the federal Pell Grant which in 2000-01 is worth up to $3,300 for those with a zero expected family contribution. At a public university this reduces financial need from $11,338 to $8,038.

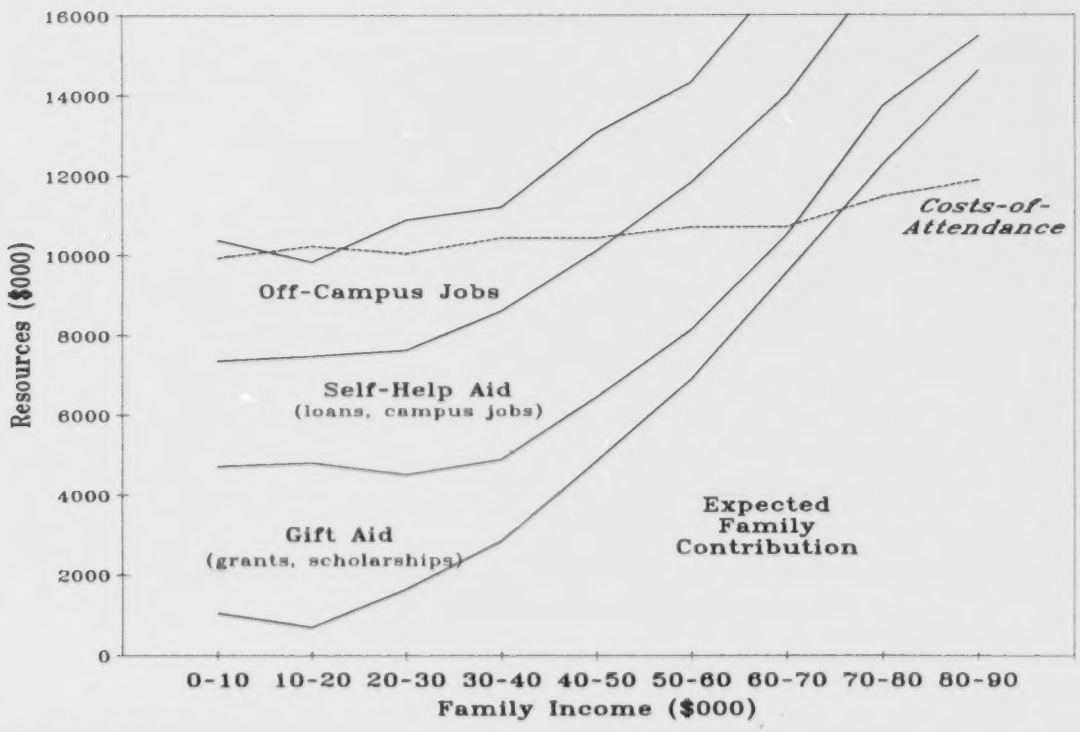
Next state-funded need-based grants are provided. These vary from zero in those states that do not offer them (**South Dakota, Alaska, South Carolina, Georgia**, etc.), up to enough to cover tuition and fees in some cases. In states that provide the large state grants to cover tuition and fees, the state grant might be up to $3510 for 2000-01--the national average tuition and fee charge in public 4-year institutions according to The College Board. This would further reduce financial need to $4528 in those states that offer these large state grants.

What is left--$4528--is left for the student to pay. Usually this involves some combination of educational loans and earnings from the federal College Work-Study program.

Empirical Studies of Unmet Need

In the national and state studies of unmet and remaining financial need shown in the table on page 13, the unmet need for the lowest income students at public 4-year institutions averaged between $2400 and $2800 after educational loans and earnings from campus jobs were deducted. These data were for the 1995-96 academic year, and were from the National Postsecondary Student Aid Study.

Financing a Public 4-Year Education
1995-96 Academic Year



Source: NPSAS96

34 B

These national and state studies show a very consistent pattern in the distribution of unmet or remaining need across family income levels. All studies show large amounts of unmet or remaining financial need for students from families with incomes below about $40,000 per year.

And, above about $60,000 per year, unmet need figures are negative. That is, students are receiving more financial aid than they need to attend college. Much of this aid is unsubsidized educational loans that presumably help families manage the cash-flow issue of paying college bills on time. But these students are also receiving gift aid and have been awarded College Work-Study jobs.

In fact borrowing money through educational loans and working while in college appear to be characteristics of students at all family income levels. These self-help forms of student financial aid may be helping lower income students finance college attendance costs, and higher income students to enrich their lifestyles or let their parents off the hook for contributing their calculated expected family contribution.

The 1995-96 National Postsecondary Student Aid Study uniquely provides information on term-time off-campus earnings from employment. This is not financial aid managed by the campus aid office. It is a form of moonlighting. And it enables students from low income backgrounds to earn enough to cover the unmet need portion of the costs-of-attendance budget.

Conclusions

Financial aid has its origins in helping students with real financial needs to be able to finance their college attendance costs. Clearly it has failed to do so. Below about $40,000 of family income dependent undergraduates face vary large amounts of unmet financial need. Even the aid they receive is often primarily self-help, either educational loans or campus jobs. As a result they also must work during the school year at off-campus jobs to complete the financing of their college budgets.

Above about $50,000 per year in family income, students are often receiving more financial aid than they need to attend college. This includes both gift aid and self-help aid. These students are also often working at off-campus jobs. It is doubtful that their parents are providing the family contribution expected by the federal methodology. At best this is a mal-distribution of financial aid that short-changes students from low and moderate family income backgrounds

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Postsecondary Education
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The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 105 www.postsecondary.org March 2001

Just and Efficient College Finance

[Editor: The following statement appeared in the New York Times in a full-page ad on March 7.]

As scholars and policy analysts whose research has focused on higher education, we believe that our nation and our colleges and universities need to recommit to a fundamental statement that will foster a just and efficient allocation of public and private resources for higher education.

> *Financial assistance to students and families – whether federal, state, or institutional in origin, and whether in the form of grants, loan subsidies, or tax-advantaged programs – should be concentrated on students from low- and moderate-income families. It is these students for whom financial aid makes a difference in the decision to enroll in and complete college.*

Our purpose is to reaffirm public policies that will maximize the development of the individual talent of all Americans and will strengthen the nation's economic security. We believe that in recent years the country has diverted attention, incentives, and revenues away from students and families with the greatest financial need. Our policymakers and our institutional leaders should recommit to helping those with the fewest resources. We present these facts underlying this statement.

Facts:

1) Although our country has made progress in the last three decades in broadening access to higher education, an enrollment gap persists, one based on family income, that current programs of student support have not erased.

2) Over the past 20 years, the burden of paying for public higher education has shifted significantly from the general state taxpayer to students and families, as state support has not kept pace with total costs of instruction, and as tuition has increased to cover the shortfall.

3) To shoulder this growing burden over the past decade, loans and student non-academic work have sharply exceeded grants in the supply of financial aid. Low- and moderate-income students must increasingly borrow heavily and work excessive hours to the detriment of their studies in order to gain access to college. The prospect of debt discourages many less advantaged young people from considering college. And many of those who do enroll leave college with substantial loan burdens before earning a degree.

4) Public and private colleges and universities are increasingly emphasizing criteria other than financial need in the awarding of scholarship aid.

5) Growing numbers of low- income young people seeking higher education are increasingly limited in their choice to the lowest-priced colleges and part-time attendance, reducing the odds that these students will earn a college degree.

6) In 2008, the number of high school graduates in the country is projected to be 26% higher than the 1996 level. The front end of this expansion is now moving through the educational pipeline. Most of this growth will come from groups that will be poorer on average than the population at large, greatly increasing the demand for need-based financial aid to assure that higher education is affordable for all.

7) Research clearly indicates that financial aid and lower prices of higher education make a much larger difference in the college-going behavior of low- and moderate-income students, than in the behavior of students from middle- or upper-income families.

8) Recent federal and state initiatives have favored higher income families through such forms of aid as tuition tax credits, tuition prepayment plans, and tax-deferred savings. Programs such as these are inefficient in that they subsidize college-going behavior that would occur in their absence.

The policy implications of this statement are:

1) Colleges and universities perform most effectively in the public interest when they concentrate their own financial aid on academically qualified but financially needy students, rather than using aid to subsidize financially able students to enroll at their campuses.

2) States bear the primary responsibility of assuring a supply of places and financial arrangements that permit all eligible students to enroll in college. States facing large enrollment increases in this decade bear a particularly heavy responsibility for supplying sufficient places for future students and meeting the increasing need for financial assistance.

3) The federal government has the principal responsibility of providing a solid foundation of need-based grants and loans. Priority should be placed on the restoration of grants rather than further expansion of loans for undergraduates, or tuition tax benefits for families.

The American people clearly understand the vital importance of access to higher education in today's economy. The challenge facing the nation is not one of finding the resources, but of directing them to where the needs are greatest and using them most efficiently. We urge a national recommitment to this statement.

Sandy Baum, Skidmore College
David W. Breneman, University of Virginia
Patrick M. Callan, The National Center for Public Policy and Higher Education
William C. Chance, Northwest Education Research Center (NORED)
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Gary Orfield, Harvard University
Morton Owen Schapiro, Williams College
Robert Zemsky, University of Pennsylvania's Institute for Research on Higher Education

Family Income and Higher Education Participation for Dependent 18 to 24 Year Olds 1999

Family income is the foundation of federal higher educational policy defined in Title IV of the Higher Education Act of 1965, as amended. The student financial aid programs authorized in Title IV determine student need for financial assistance beginning with an assessment of each family's ability to pay. This is based largely on family income. Title IV then authorizes the federal student financial aid programs that provide funds to help students who need resources to complete the financing of their college budgets.

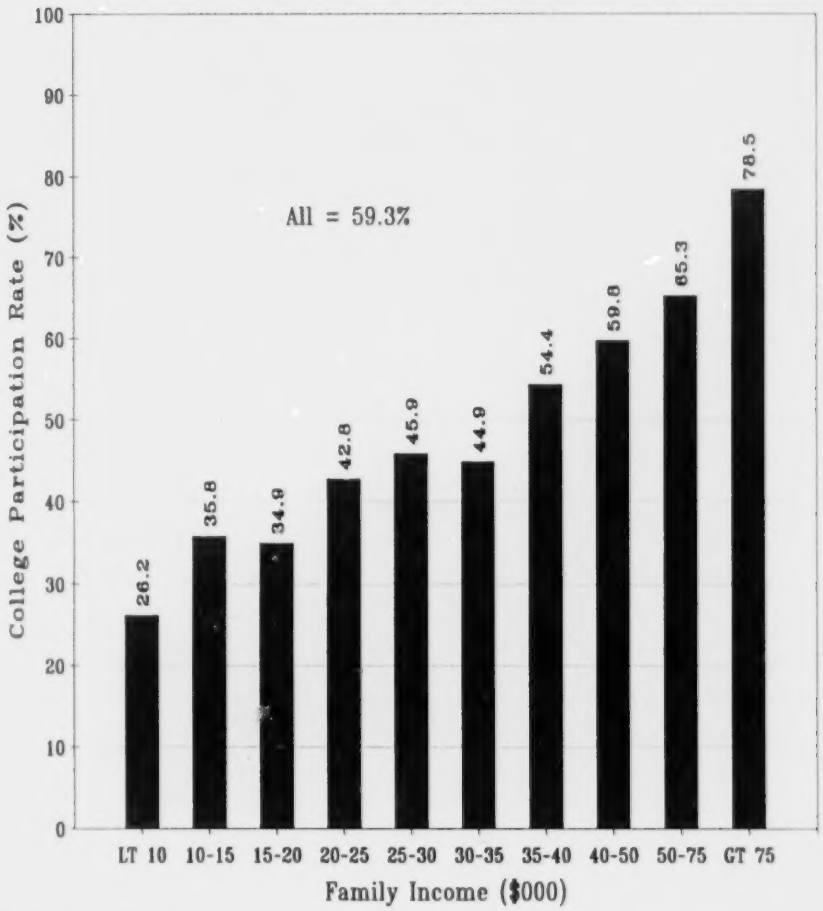
The TRIO programs of tutoring/counseling/mentoring services are also authorized in Title IV. Student eligibility for TRIO services is primarily determined by family income falling below 150 percent of the federal poverty level.

Here we review data from the Census Bureau on higher educational participation by family income in the fall of 1999. These data describe the relationship between family income and high school graduation, college continuation and college participation (which is the combination of high school graduation and college continuation).

These data are available by gender and race/ethnicity. At every level of disaggregation of population data, the same powerful relationship between educational performance and success with family income holds. More family income produces greater levels of educational attainment.

Of course the relationship between family income and educational participation is neither direct nor exclusive.

College Particiation by Age 18 to 24 Years for Dependent Family Members 1999



Source: Census Bureau

- Family income influences where families live and the quality of the schools their children attend.
- Family income tends to define communities, and communities differ in their support for education and commitments to student success.
- Family income is related to access to health care, nutrition, health information and healthy lifestyles.
- Family income is related to artistic experience and involvement.

In so many ways, family income defines our living standards. And family income in turn is defined by

educational attainment. In this circular world, we need to pause and reconsider who participates and who does not participate in the higher educational opportunities available to us because participation is so vital to our welfare.

In every respect, higher education is the foundation for our individual, family, community, state and national welfare. Those who engage in higher education will later have access to opportunities not available to the least educated among us.

In this analysis we examine data for 1999 recently released by the Census Bureau to see who participates and who does not according to family income. We are looking here at patterns in the 1999 data to see who is engaged in education and who is not. This lens provides a clear picture of future living standards. Those who are engaged in higher education today have far brighter prospects in life than those who are not participating.

The Data

The data analyzed and reported here were collected in the October 1999 Current Population Survey. The CPS is a monthly Census Bureau survey of about 50,000 U.S. households for the purpose of gathering data on employment and unemployment in the U.S. The October supplement to the CPS gathers additional data on school enrollment of all household members. In addition to the school enrollment data, additional demographic data on family income, gender, race/ethnicity and other descriptive information is collected on each household member.

These data are eventually published in the P20 series of Current Population Reports by the Census Bureau, both in paper and electronic forms. The data used in this analysis come from Table 14 of the Census Bureau report on 1999 school enrollments.

Jamieson, A., et al. (March 2001.) *School Enrollment in the United States-Social and Economic Characteristics of Students.* Current Population Reports, P20-533. Washington, DC: U.S. Department of Commerce, Census Bureau.

The most recent results plus the reports for several prior years are available for download as .pdf files from the Census Bureau's website at: http://www.census.gov/population/www/socdemo/school.html

These data describe the enrollment in high school and college of dependent family members between the ages of 18 and 24 years. Students are classified by family income, gender and race/ethnicity. There enrollment is classified by being enrolled or not enrolled, with several disaggregations of each. Those not enrolled are classified as not high school graduates, high school graduates but no college, less than a bachelor's degree and bachelor's degree or more. Those that are enrolled are classified as enrolled below college, enrolled full-time (2-year, 4-year), and enrolled part-time (2-year, 4-year). Our analysis here and in the subsequent article exploit these disaggregations.

Family Income and Race/Ethnicity

Racial/ethnic groups are distributed across family income intervals differently. Because different forms of financial aid are targeted at different income levels, we first examine the distribution of different racial/ethnic groups of students across family income intervals.

The median family income for all dependent 18 to 24 year olds in 1999 was $51,590. By racial/ethnic group, median family incomes for dependent

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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18 to 24 year olds in 1999 were as follows:

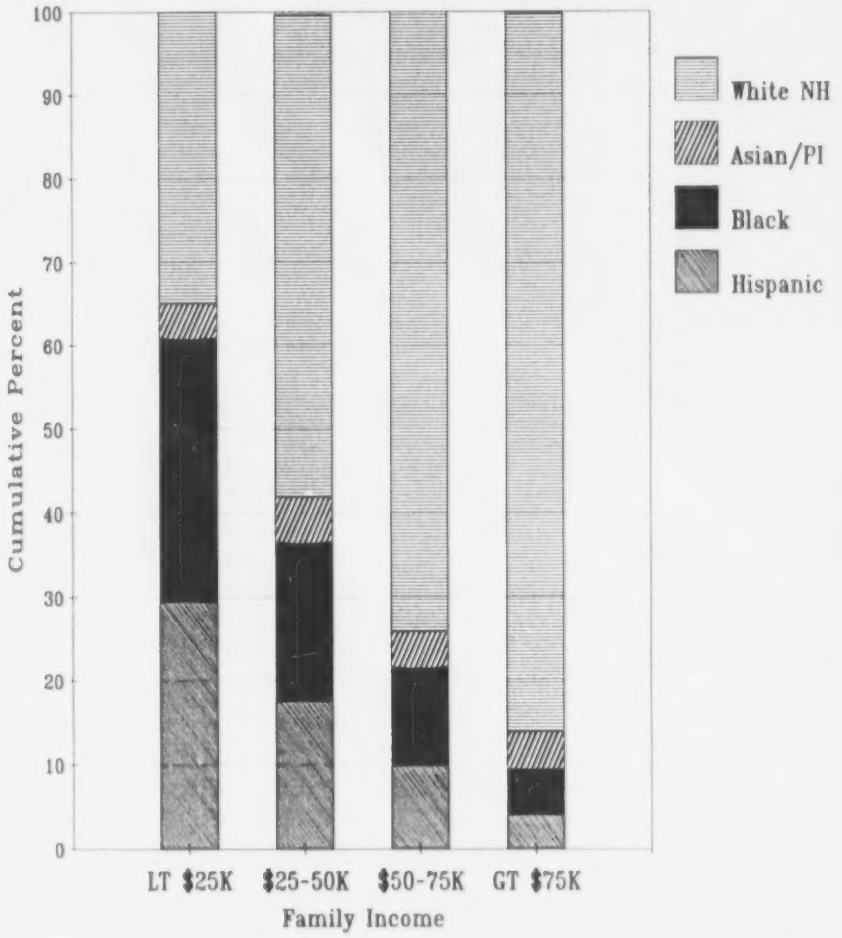
white, non-Hispanic	$63,743
black	$29,524
Asian/Pacific Islander	$48,879
Hispanic	$28,485

Another way of looking at these data is shown in the chart on this page. Here we have divided the population into four roughly equal quartiles of family income: $0 to $24,999, $25,000 to $49,999, $50,000 to $74,999, and $75,000 and over.

For the population of dependent 18 to 24 year olds in 1999, 65 percent were white non-Hispanic, 16 percent were black, 5 percent were Asian/PI and 14 percent were Hispanic. However, within each family income quartile the distribution of these groups varied sharply.

- **White non-Hispanics** were 35 percent of population below $25,000 family income, 58 percent of the population between $25,000 and $50,000, 74 percent of the population between $50,000 and $75,000, and 86 percent of the population above $75,000.
- **Blacks** were 31 percent of the population below $25,000 per year, 19 percent of those between $25,000 and $50,000, 12 percent of those between $50,000 and $75,000, and 5 percent of those with family incomes greater than $75,000.
- **Asian/Pacific Islanders** were the most equally distributed. They were 4 percent of the lowest $25,000, 5 percent of the second, 4 percent of the third and 5 percent of the top.
- **Hispanics** were 30 percent of the population below $25,000, 18 percent of those between $25,000 and $50,000, 10 percent of the population between $50,000 and $75,000, and 4 percent of those from families with incomes of more than $75,000.

Population Distribution of Dependent 18 to 24 Year Olds by Race/Ethnicity and Family Income 1999



Expressed another way, minorities were 65 percent of those with incomes of less than $25,000, 37 percent of those with incomes of $25,000 to $50,000, 22 percent of those with incomes between $50,000 and $75,000, and 14 percent of those with incomes above $75,000.

During the 1990s there was a sharp departure in federal and state financial aid policy away from need-based aid targeted on students from lower income backgrounds. Instead, among the new initiatives were:

- Federal tax credits not available to those too poor to pay federal income taxes but available to those with incomes up to $100,000 per year,
- Relaxed federal need analysis, where home equity was removed from need analysis for those that had accumulated home equity,
- State merit-based scholarship programs that in one case (Georgia) excluded poor students from eligibility, and are all tilted toward students from higher family income backgrounds,
- State tax-favored pre-paid tuition and college savings programs for

families with discretionary resources not needed for current living expenses that can be set aside for future higher education expenses, and

- Institutional scholarships awarded without regard to need but on criteria that tended to favor students from relatively affluent families.

Clearly, federal, state and institutional student financial aid resources have been shifted away from the growing minority population, and toward the shrinking white non-Hispanic share of the population during the 1990s. These policies are flagrantly racist. They are geared toward white non-Hispanic students and away from minority students, particularly blacks and Hispanics.

College Participation

College participation is the share of the population that reaches college. They may be currently enrolled, or they may have completed one to 3 years of college and are no longer enrolled, or they may have completed a bachelor's degree or more and are no longer enrolled in college. The college participation rate is also the product of the high school graduation rate and the rate at which high school graduates have enrolled in college.

In 1999 59.3 percent of the population of dependent 18 to 24 year olds were either currently enrolled in college or had enrolled earlier and were no longer enrolled.

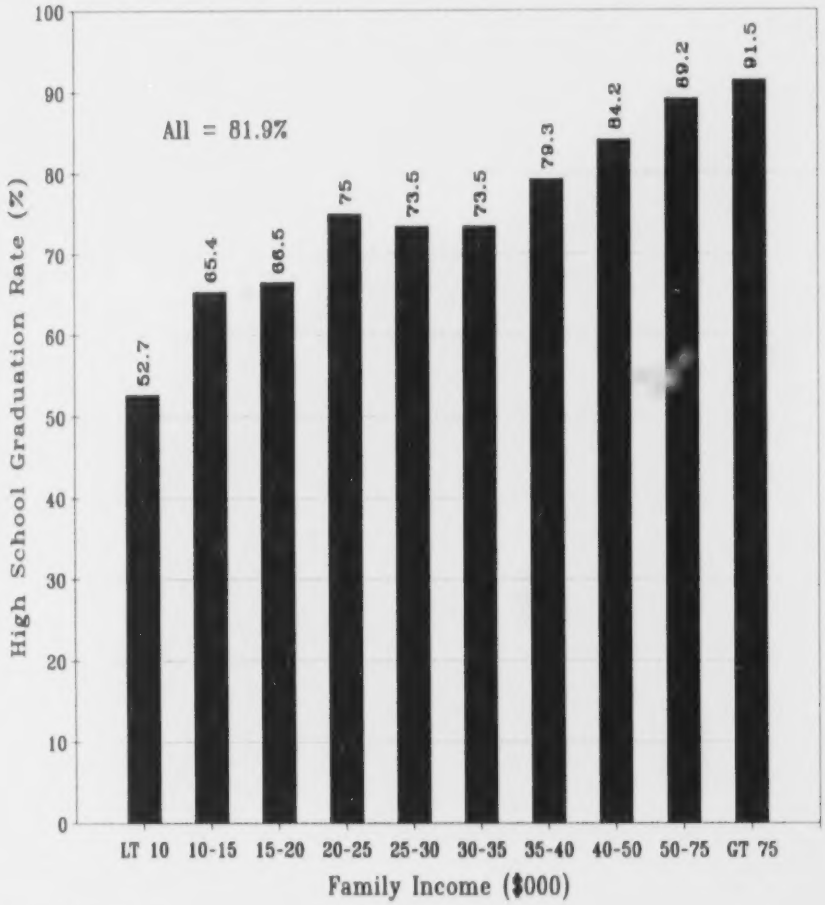
Of course, participation rates varied widely across family income levels, as shown in the chart on page 3. College participation rates ranged from 26.2 percent for those from families with less than $10,000 per year in family income, to 78.5 percent among those from families with incomes of more than $75,000 per year. Students from the highest family income level were about three times more likely to reach college than were students from the lowest family income level.

This pattern is similar to what we have observed in the data for recent years. Students from the lowest family incomes are about a third as likely to reach college by age 18 to 24 years as are students from the highest family income levels.

High School Graduation

The first hurdle on the path to college is simply graduating from high school.

High School Graduation Rate by Family Income for Dependent Family Members 18 to 24 Years 1999



Source: Census Bureau

About 82 percent of all dependent 18 to 24 year olds in 1999 were high school graduates, under the Census Bureau's expansive definition of high school graduation (it includes GEDs).

Separately we have written about the general decline in public high school regular graduation rates since the early 1980s. Nationally, the share of public high school ninth graders receiving regular high school diplomas four years later has declined from 74.5 percent in 1982 to 67.2 percent in 1999. Comparable declines in public high school graduation rates have

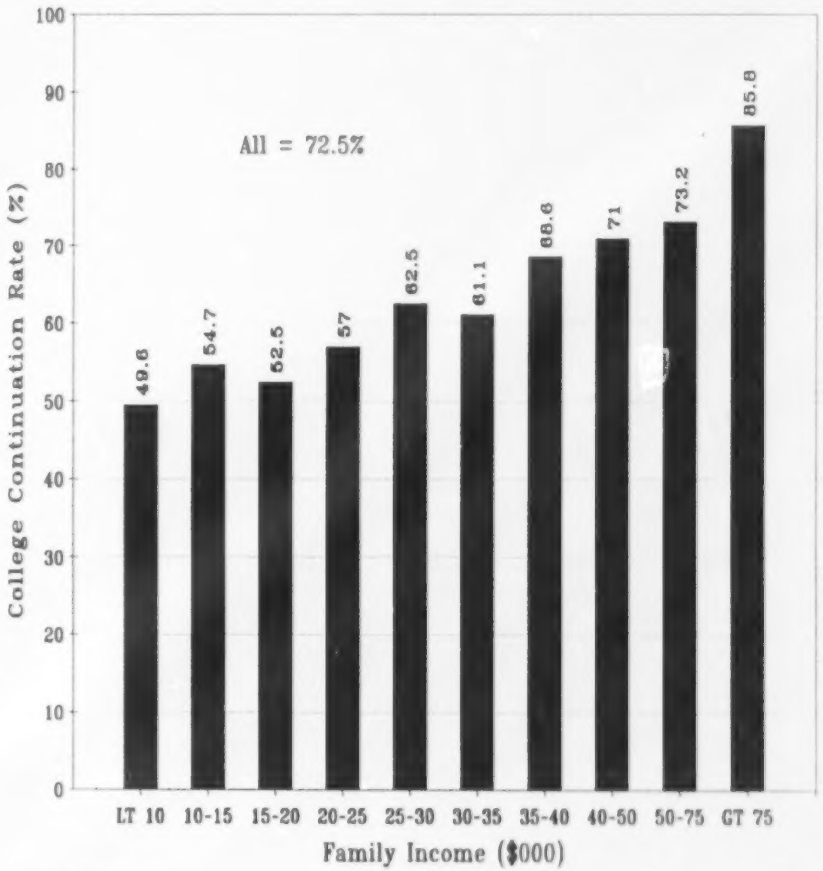
occurred in nearly every state since the early 1980s. (Public high school graduation rates by state from 1981 through 1999, the state data used for these rate calculations, and each state's rank among the states is available on our website at www.postsecondary.org under the Spreadsheets button.)

This decline since 1982 tracks closely with the release of the federal report *A Nation at Risk* in April 1983 and subsequent federal and state efforts to raise the bar to high school graduation, discourage social promotion, enact high-stakes test for high school graduation, encourage high school students to work harder and get better grades, etc.

Of course high school graduation rates vary with income. In 1999 the proportion of dependent 18 to 24 year olds who were high school graduates (or GED recipients) ranged from 52.7 percent for those from families with incomes below $10,000 to 91.5 percent of those who came from families with incomes of more than $75,000 per year.

Thus at the very first hurdle on the path to college, the population of dependent 18 to 24 year olds is sorted out according to the family incomes into which they were *born*.

College Continuation Rate by Family Income for Dependent Family Members 18 to 24 Years Who Have Graduated from High School 1999



Source: Census Bureau

College Continuation

Among 18 to 24 year old dependent family members who had graduated from high school (or received a GED) in 1999, 72.5 percent continued their educations in college. They were either currently enrolled in college, or had started college but were no longer enrolled.

Again, college continuation rates varied by family income. The rate was lowest at 49.6 percent for those from the lowest family income level, below $10,000 per year. The rate was highest at 85.8 percent for those from the highest family income level, above $75,000 per year. These data are shown in the chart on this page.

(The second article in this issue of OPPORTUNITY explores these data on college participation rates in further detail. The published Census Bureau data permit the calculation of participation rates by full-time/part-time status, and level of institution--2-year versus 4-year. Thus we can calculate the proportion of the population at different income levels that is on track to earning a bachelor's degree from college. This track is full-time enrollment in a 4-year institution. This tracking calculation shows that those from the lowest family incomes are least likely to be on track to completing a bachelor's degree, while those from the highest family incomes are most likely to be on track to a bachelor's degree from college.)

Gender

College participation. In 1999 53.4 percent of the males and 66.3 percent

of the females who were 18 to 24 year old dependent family members participated in college. That is, they had both graduated from high school and continued their educations in college in the 18 to 24 age window.

For both men and women college participation rates increased with income. In both cases rates were lowest for those from lowest income families, and highest for highest income families. At nearly all family income levels women were far more likely than men to reach college. There were two exceptions--both below $20,000 family income--where men were more likely to reach college than were women.

High school graduation. Among dependent 18 to 24 year olds, 78.8 percent of men and 85.5 percent of women were high school graduates/GED recipients.

For both men and women, high school graduation rates increased with income. These rates were lowest for those from lowest family income backgrounds, and highest for those at the highest levels of family income. At all but two family income ranges below $20,000, women were considerably more likely than men to have graduated from high school.

College continuation. Among those who had graduated from high school, college continuation rates were 67.8 percent for men and 77.6 percent for women. The gap in the rates for men and women were largest between $20,000 and $75,000 of family income, and was less at the lowest and highest income levels.

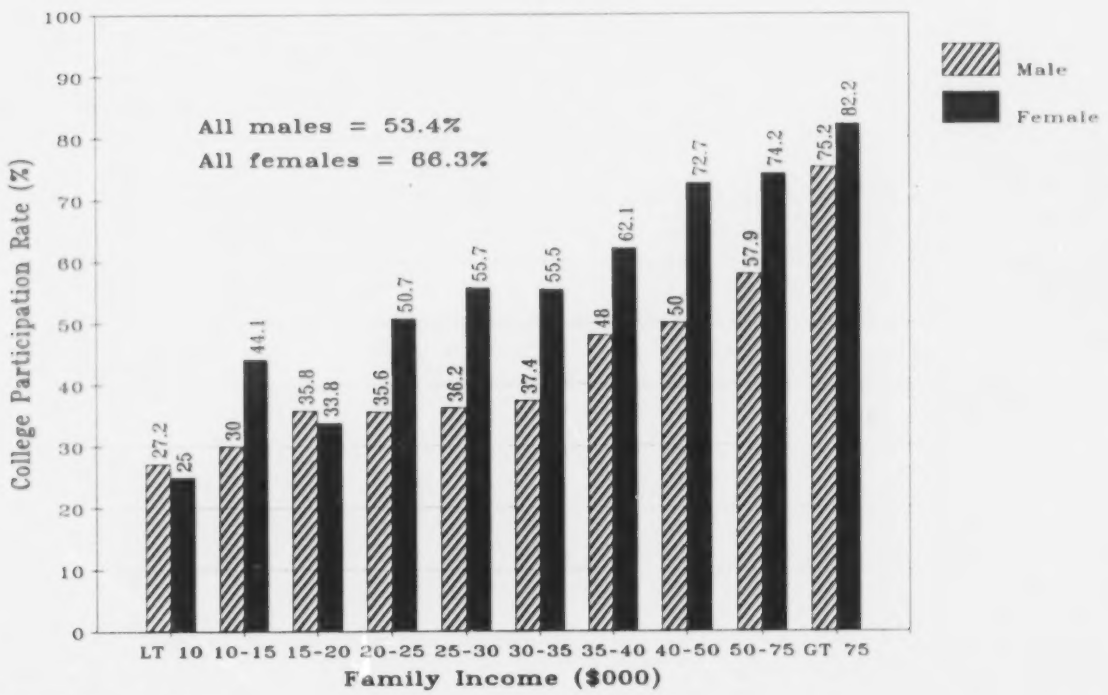
In two of three family income ranges below $20,000, the male rate exceed the female rate. The same pattern occurred in high school graduation.

The result, of course, was males having somewhat great college participation rates in these ranges.

OPPORTUNITY has written recently and extensively about the plight of males in the educational pipeline. Over the last 25 years nearly all of the progress in education has been earned by females. This is a serious problem for males in all 50 states of every racial/ethnic group.

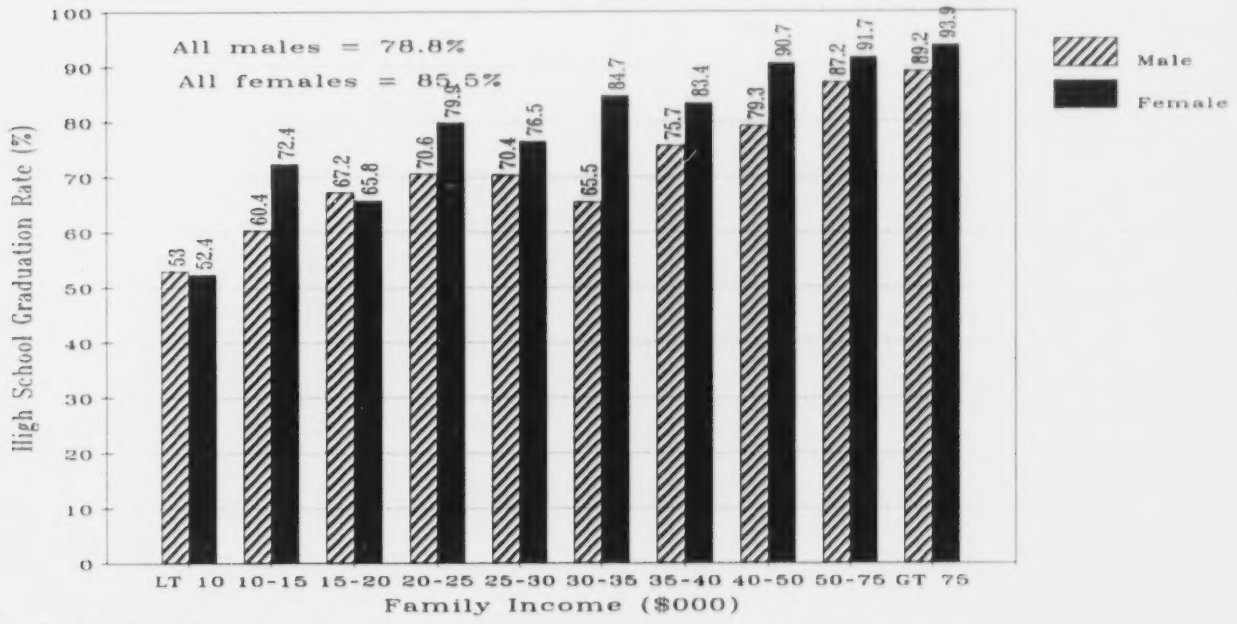
The data reported here indicate that this is also a problem across most levels of family income, including those from middle and upper income families as well. Our review of these data over the last several years indicates that men are at a disadvantage compared to women in high school graduation, college continuation and college participation at all levels of family income. This finding is *not* limited to any particular

College Participation by Gender and Age 18 to 24 Years for Dependent Family Members 1999



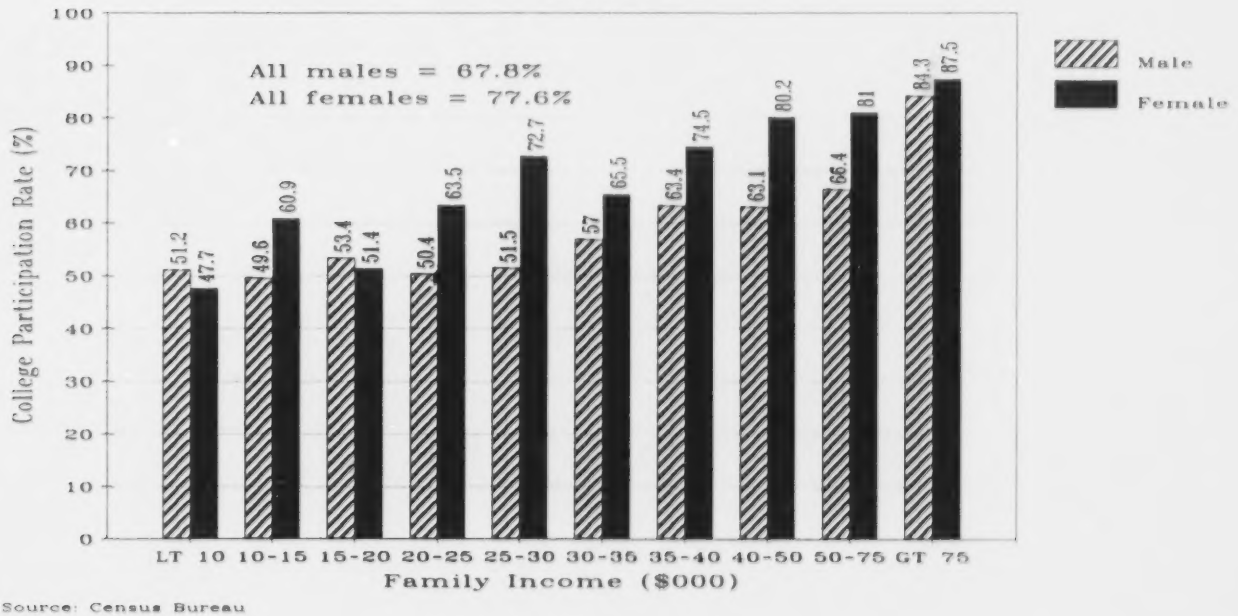
Source: Census Bureau

High School Graduation Rate by Gender and Family Income for Dependent Family Members 18 to 24 Years 1999



Source: Census Bureau

College Continuation Rate by Gender and Family Income for Dependent Family Members 18 to 24 Years Who Have Graduated from High School 1999



Source: Census Bureau

family income range.

Race/Ethnicity

College participation. In 1999 college participation rates for dependent 18 to 24 year olds were 63.3 percent for white non-Hispanics, 47.9 percent for blacks, 82.0 percent for Asians and 37.5 percent for Hispanics.

The previous pattern of participation rates increasing with family income held well for white non-Hispanics, blacks and Hispanics.

- White non-Hispanic participation rates increased from 31.8 to 74.7 percent between the lowest and highest family income intervals.
- Black participation rates increased from 17.1 to 77.6 percent across the family income range.
- Hispanic participation rates ranged from 28.6 to 62.3 percent between the lowest and highest levels of family income.

However, this pattern says little about college participation rates for Asians. This group appears to engage in higher education at extraordinarily high rates quite independent of family income.

- Participation rates for Asians went from 71.4 percent at the lowest income level to 91.6 percent at the highest.

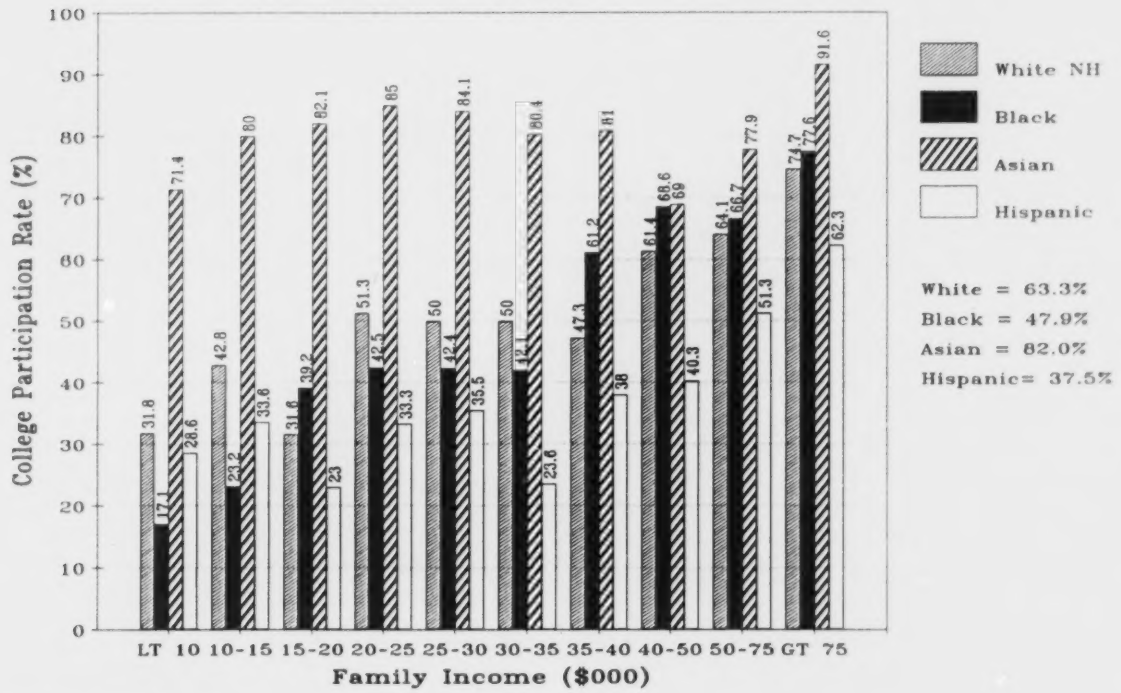
College participation rates for Asians from families with incomes below $10,000 were similar to those for whites and blacks with incomes greater than $75,000 and well above Hispanic participation rates at this highest family income level. Apparently, limited family income does not constrain higher education participation for Asians in the same way that it does for the other racial and ethnic groups of the population. We stand in awe of this achievement.

High school graduation. The graduation rates for dependent 18 to 24 year olds in 1999 were 86.8 percent for non-Hispanic whites, 74.7 percent for blacks, 91.0 percent for Asians and 65.1 percent for Hispanics. With the exception of Asians, rates increased with family income.

College continuation. In 1999 the continuation rates for high school graduates were 72.9 percent for non-Hispanic whites, 64.1 percent for blacks, 90.1 percent for Asians and 57.7 percent for Hispanics. Again, except for Asians these rates tended to increase with family incomes.

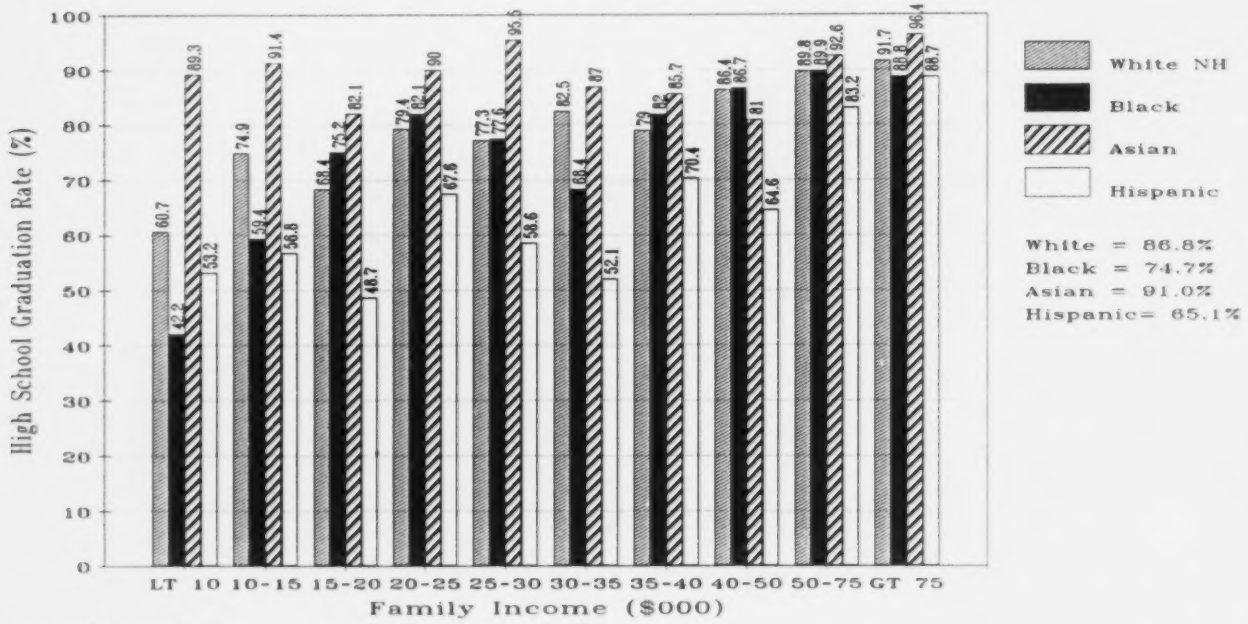
These Census data show the powerful relationship between family income and high school graduation, college continuation and college participation. The relationship exists for the population, for men and women, and for whites, blacks and Hispanics. Only the Asians appear to be immune from the effects of family income on their educational participation.

College Participation by Family Income and Race/Ethnicity for Dependent Family Members Age 18 to 24 Years 1999



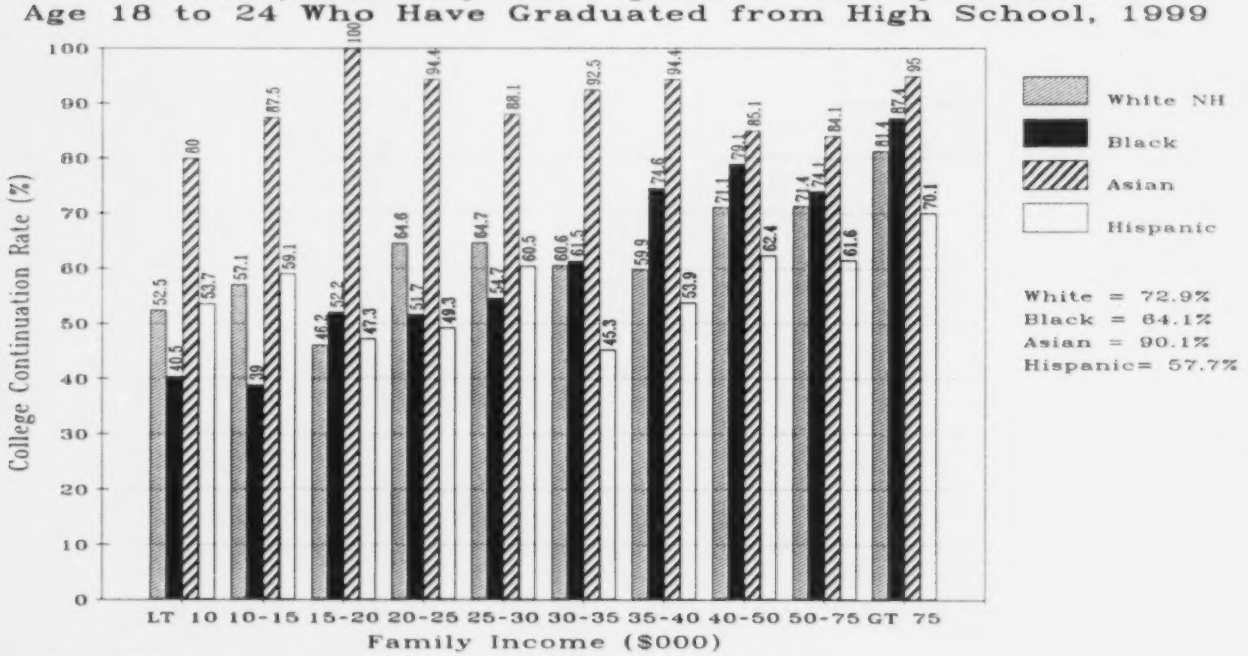
Source: Census Bureau

High School Graduation by Family Income & Race/Ethnicity for Dependent Family Members Age 18 to 24 Years 1999



Source: Census Bureau

College Continuation Rate by Family Income and Race/Ethnicity for Dependent Family Members Age 18 to 24 Who Have Graduated from High School, 1999



Source: Census Bureau

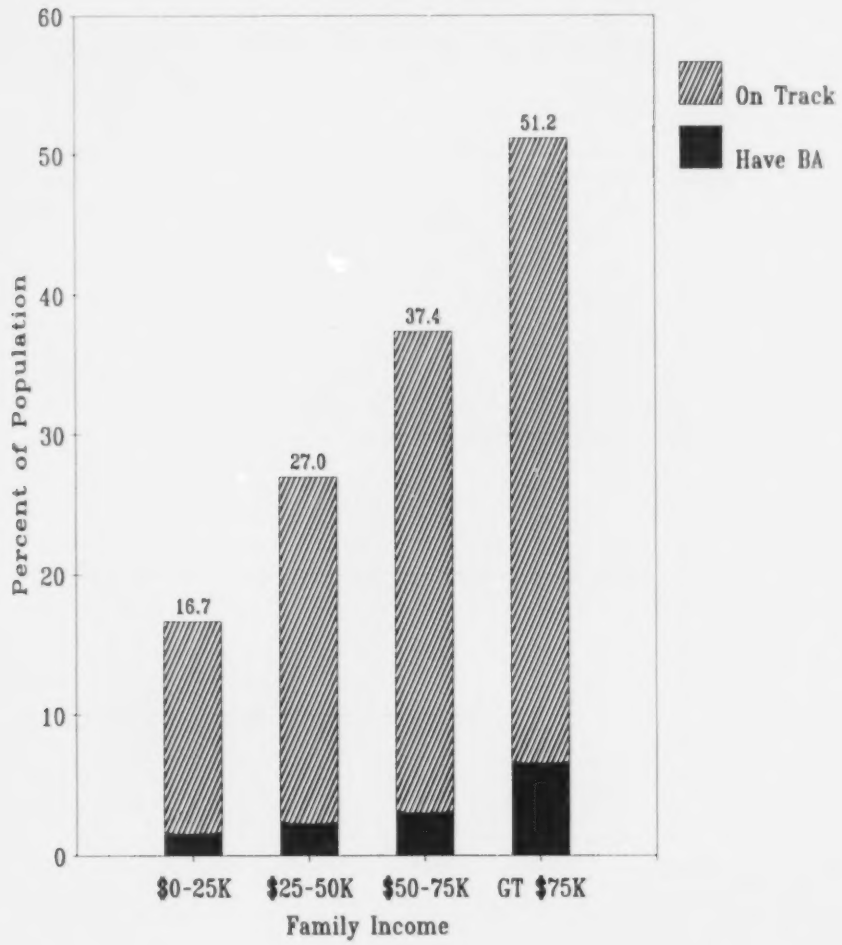
The Track to a Bachelor's Degree from College: Full-Time Enrollment in a Four-year College by Family Income

A consistent finding from past studies of bachelor's degree attainment is a simple formula. This formula requires that a student who wants a bachelor's degree should do three things:

- Enroll in college immediately after graduating from high school. Do not stop out "for a few years."
- Enter a four-year college. Do not try to attain a bachelor's degree by starting out at a two year college, although some clearly succeed by this path.
- Attend college full-time. Do not attend part-time. Go full-bore and get it over with.

While some students may complete a bachelor's degree by violating these rules for success, the odds for success begin to drop immediately whenever these rules are not observed. The simple economic fact is that the opportunity costs of college attendance rise sharply after high school for most people--life gets complicated by careers, debts, marriage and children.

The Track to a Bachelor's Degree:
Full-Time Enrollment in Four-Year Colleges
by Family Income, 1999



Given the previous analysis of higher educational opportunity by family income, we have re-examined the raw data to see how students from different family income backgrounds are proceeding--or not proceeding--along this proven path to a bachelor's degree. Our examination leads to intuitively obvious findings:

- Family income plays a strong, positive role. Among dependent 18 to 24 year olds, those from highest family income backgrounds have both completed their bachelor's degrees at the highest rates and are most likely to be on track through full-time enrollment in a four-year college (or university). Those from lowest family income backgrounds are least likely to have completed a bachelor's degree, and are least likely to be enrolled full-time in a four-year college.
- Whether or not family income is controlled, female dependent 18 to 24 year olds are more likely than their male brethren to both have earned their bachelor's degrees or to be on track to earning them through full-time enrollment in a four-year college.
- At all levels of family income used in this study, Asians/Pacific Islanders were most likely to be on track to a bachelor's degree, and Hispanics were least likely.

Here we analyze recently released data from the Census Bureau to determine what proportion of the population of

dependent 18 to 24 year olds at different family income intervals are on track to complete a bachelor's degree. A few have already earned their bachelor's degrees. Others are on the path to doing so through their full-time enrollment in a four-year college. Here we document this progress for those that are on this track.

The Data

All of the data used here were collected by the Census Bureau in the October Current Population Survey for the years shown--1995 through 1999. The CPS is a monthly survey of about 50,000 U.S. households. Its basic mission is to collect household data on employment and unemployment. In October of each year the education supplement also collects data on the enrollment status of family members in schools and colleges.

These enrollment data appear in Table 14 of the of the P20 Current Population Report on school enrollments--P20-533. This report and its supporting detailed tables may be downloaded from the Census Bureau's website at:

http://www.census.gov/population/www/socdemo/school.html

For clarity of illustration, we have aggregated the reported income intervals into ranges of $25,000 each: zero to $24,999, $25,000 to $49,999, $50,000 to $74,999, and $75,000 and over. These four intervals are not dissimilar to income quartiles of the population of dependent 18 to 24 year olds.

Population

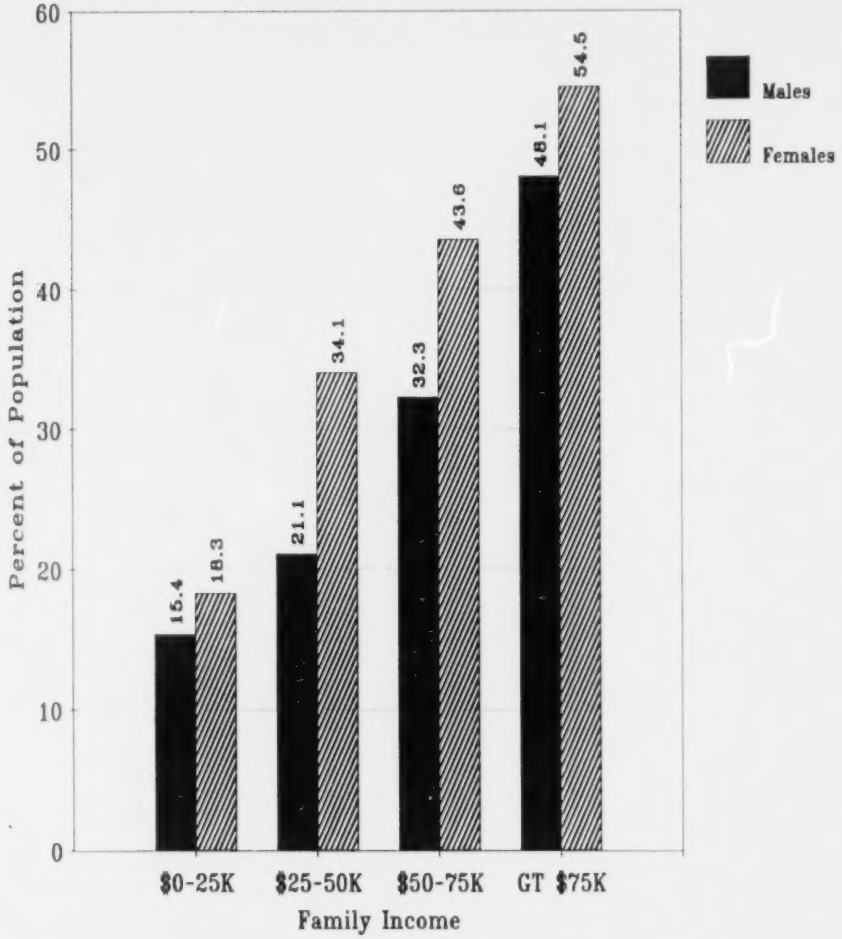
The chart on page 12 shows the proportion of the population of dependent 18 to 24 year olds in each family income interval that had either completed a bachelor's degree or was enrolled full-time in a four-year college or university. Both proportions increase directly with family income.

- For those from family incomes below $25,000 per year, 1.6 percent had completed a bachelor's degree and were no longer enrolled in college, and an additional 15.1 percent were enrolled full-time at a four-year college.
- For those from families with incomes of $25,000 to $50,000, 2.3 percent had completed a bachelor's degree and an additional 24.7 percent were enrolled full-time in a four-year college.
- For those from families with incomes of $50,000 to $75,000, 3.1 percent had completed a bachelor's degree and 34.3 percent were enrolled full-time in a four-year institution.
- For those from families with incomes of more than $75,000 per year, 6.6 percent had completed bachelor's degrees and 44.6 percent were enrolled full-time in a four-year college or university.

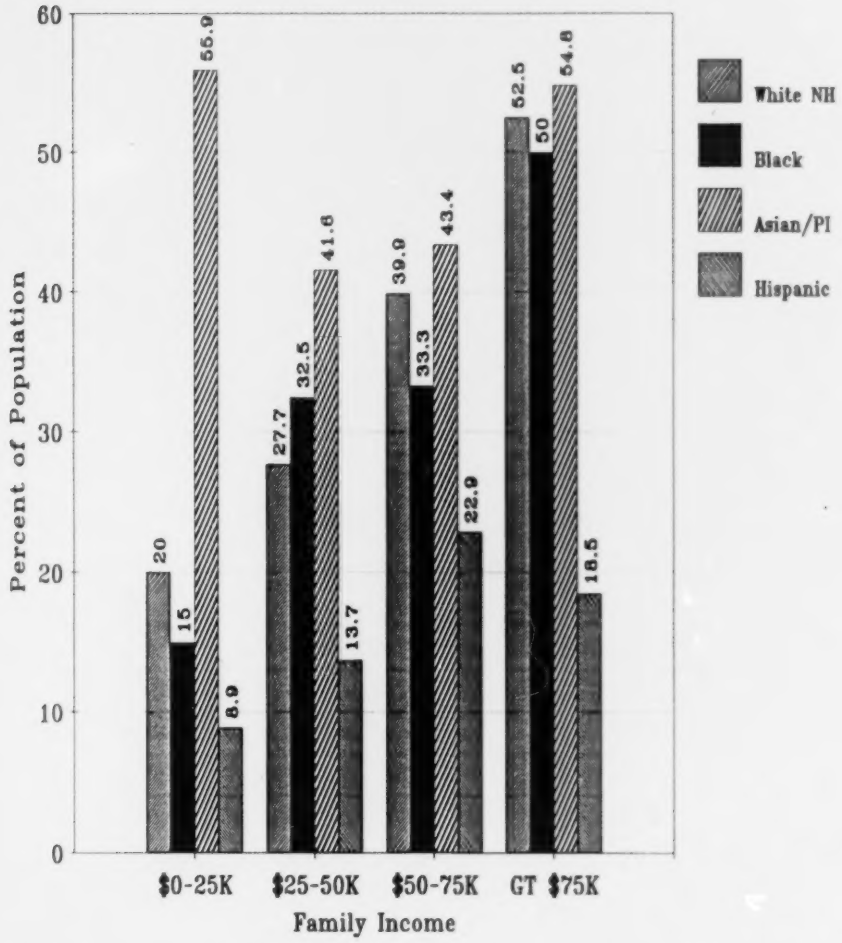
Expressed another way:

- Those from families with incomes below $25,000 comprised 21

The Track to a Bachelor's Degree by Gender
Full-Time Enrollment in Four-Year Colleges
by Family Income, 1999



The Track to a Bachelor's Degree by Race/Ethnicity Full-Time Enrollment in Four-Year Colleges by Family Income, 1999



percent of the population, had 12 percent of those enrolled full-time in a four-year colleges, and received 9 percent of the bachelor's degrees.

- Those from families with incomes of $25,000 to $50,000 were 28 percent of the population, 25 percent of those enrolled full-time in four-year institutions, and had received 18 percent of the bachelor's degrees.
- Those from families with incomes of $50,000 to $75,000 were 22 percent of the population, 24 percent of those enrolled full-time in four-year institutions, and 19 percent of those who had completed bachelor's degrees.
- Those from families with incomes above $75,000 were 29 percent of the population, were 39 percent of those enrolled full-time in a four-year college, and had received 54 percent of the bachelor's degrees.

Gender

The chart on page 13 shows the proportion of the populations of dependent 18 to 24 year old men and women at these family income intervals that are on track to a bachelor's degree. Across all income levels, 2.8 percent of men have completed a bachelor's degree and 27.3 percent were enrolled full-time in a four-year college. For women 4.5 percent have completed a bachelor's degree and 34.6 percent are enrolled full-time in a four-year institution.

For both men and women the proportion on track increases directly with family income. For men the proportion ranges from 15.4 percent at the lowest family income level to 48.1 percent at the highest. For women the proportion ranges from 18.3 at the lowest family income range to 54.5 percent. For both genders those in the highest family income range were about three times more likely to be on track to a bachelor's degree than were those from the lowest family income quartile.

In the alternative parlance, for men:

- Those from families with incomes below $25,000 were 21 percent of the population, 13 percent of those enrolled full-time in a four-year college, and had received 11 percent of the bachelor's degrees.
- Men from families with incomes of more than $75,000 were 28 percent of the male population, 40 percent of those enrolled full-time in a four-year college, and had received 56 percent of the bachelor's degrees.

The story is similar for women:

- Those from families with incomes below $25,000 per year were 20 percent of the population, 12 percent of the women enrolled full-time in a four-year college, and had received 8 percent of the bachelor's degrees.
- Women from families with incomes of more than $75,000 were 30 percent of the female population, 38 percent of the full-time enrollment of women in four-year colleges, and had received 52

percent of the bachelor's degrees awarded to these women.

Race/Ethnicity

The chart on page 14 shows the proportion of each racial/ethnic group at each family income interval on track to a bachelor's degree. The usual patterns emerge: controlling for family income, Asians are most likely to be on track to a bachelor's degree, Hispanics are least likely, and whites and blacks look similar.

What fascinates us in these data is the power of cultural variables not subject to direct measurement.

- Asians behave almost independent of family income. In fact the Asians most likely to be enrolled full-time in a four-year college came from the lowest family income interval in 1999.
- Hispanics are consistently least likely to be on track to a bachelor's degree at each income interval.
- Blacks and non-Hispanic whites are almost indistinguishable when family income is controlled. (We are reminded of an old saying: The difference between black and white is green.)

Trends

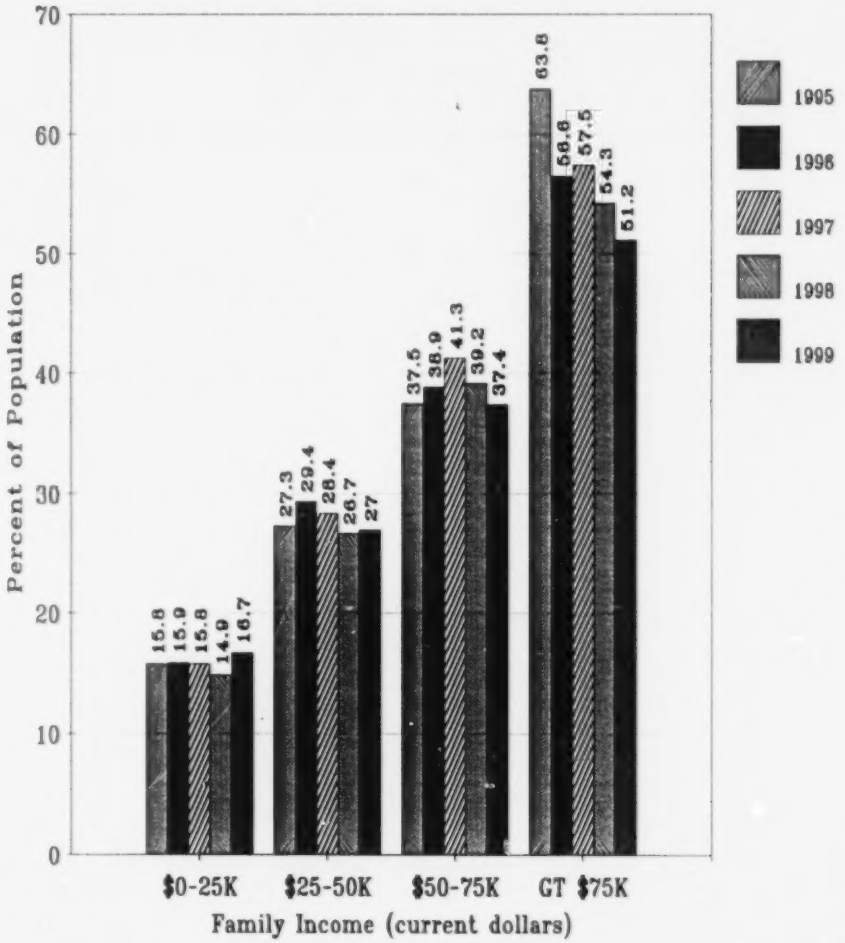
The chart on this page shows the proportion of the population in each family income interval on track to a bachelor's degree for each of the last five Current Population Surveys, 1995 through 1999. Unfortunately these are in current dollars, which are not quite comparable from year to year due to inflation.

Nevertheless, the consistency of this tracking measure is clear. Except for the family income interval over $75,000, for the last five years the proportion of each population on track to a bachelor's degree has remained strikingly stable.

- Below $25,000 the proportion of the population enrolled full-time in a four-year college, or having completed a bachelor's degree has been close to 16 percent.
- Between $25,000 and $50,000, the proportion has remained close to 28 percent.
- Between $50,000 and $75,000, the proportion has remained close to 39 percent.

Only above $75,000 in family income has there been a noticeable downward trend in the proportion of the population on track to a bachelor's degree, from 64 percent in 1995 to 51 percent in 1999. The absence of an inflation correction could account for some of this apparent decline.

The Track to a Bachelor's Degree
Full-Time Enrollment in Four-Year Colleges
by Family Income, 1995 to 1999



Summary

Getting a bachelor's degree from college is no accident. The circumstances people are born into--family income, gender and race/ethnicity--play powerful roles in determining this outcome. Being born into a high income family, as a female and Asian provides advantages. Being born into a low income family, as a Hispanic male is disadvantageous.

NASSGAP/NCHELP Student Financial Aid Research Network Conference May 10-12, 2001, Seattle, Washington

The eighteenth annual student financial aid research network conference will be held May 10 to 12 at the Renaissance Madison Hotel in downtown Seattle. This conference annually gathers most of the academic and policy researchers from across the U.S. to share and discuss their work.

This year's conference sessions include:

- *Promises to Keep: What California Needs to Know and Do to Expand Higher Educational Opportunity*
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- *Higher Education Finance and Economic Opportunity in the Golden State*
- *State Merit Grants: Do They Promote Access to Higher Education?*
- *Enrollment Effects of Merit-Based Financial Aid: Evidence from Georgia's HOPE Scholarship Program*
- *For All Who Have Interest and Potential to Learn: Perspectives of New Jersey Part-Time Students*
- *Illinois Initiatives to Meet the Needs of Adult Learners*
- *The State of Student Aid in Texas*
- *Student Employment: Curse or Blessing? Yes!*
- *Discounting Toward Disaster*
- *Important Trend and the Role of Pell Grants in College*
- *Persistence and Attainment of Beginning Students With Pell Grants*
- *Institutional Graduation Rates and Proportions of Pell Grant Recipients*
- *Personality Correlates of Academic Achievement and Student Loan Defaults*
- *The Impact of Asset-Tested College Financial Aid on Household Savings*
- *The Canadian Millennial Scholarship Program*
- *Access Denied: A Report of the Advisory Committee on Student Financial Assistance*
- *Getting Through College: Voices of Low-Income and Minority Students in New England*

For more information on this conference, contact Dr. Jerry Davis at (317) 951-5763, or by e-mail at jsdavis@luminafoundation.org.

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Number 106 www.postsecondary.org April 2001

Trends in College Participation by Family Income 1970 to 1999

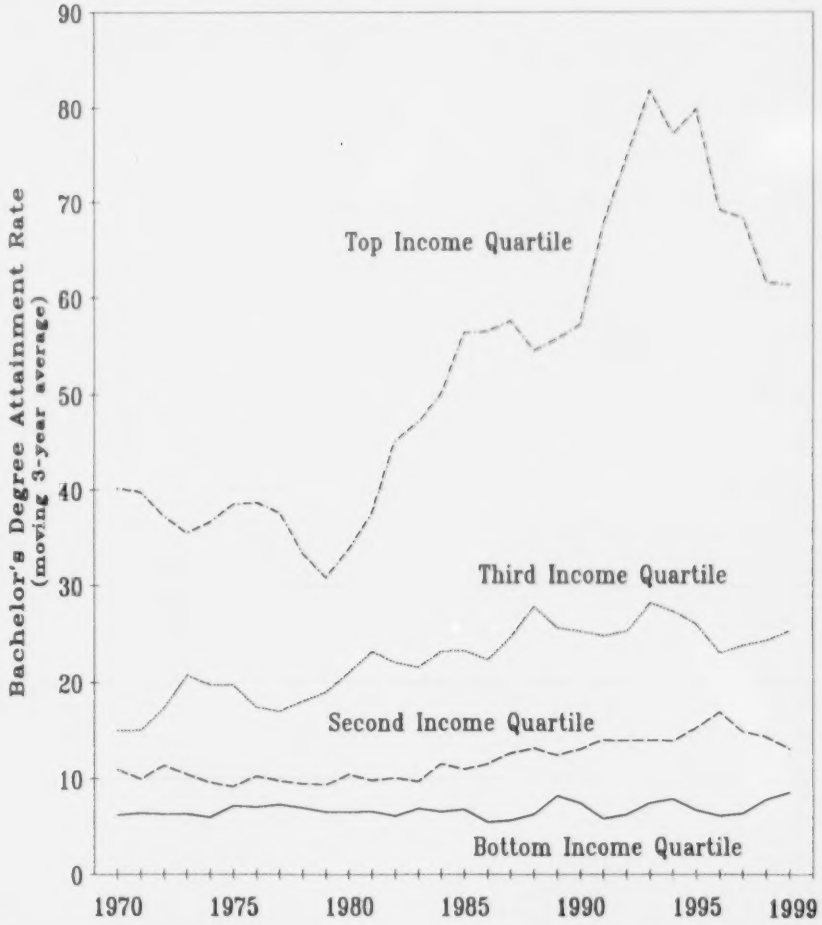
Over the last twenty years higher educational opportunity has been greatly expanded. Generally more students are continuing their educations after high school. This has occurred at all levels of family income.

However, nearly all of the gains in bachelor's degree attainment by age 24 have occurred for students from the top quartile of the family income distribution, or those born into families with incomes above about $81,000 per year in 1999. There has been relatively little progress in higher educational completion for the bottom half of the family income distribution.

The implications of these findings are vital to our country's welfare:

- The United States already has a serious income and welfare distribution problem, and it has been getting worse since 1967.
- There are growing numbers and percentages of poor children in the K-12 pipeline headed for higher education.
- A rapidly growing share of the population of children (and future college students) are minorities from families with incomes less than half that of the non-Hispanic white population.
- In the 1990's the student financial aid system and many four-year colleges lost focus on and interest in serving students from low income family backgrounds.

Estimated Baccalaureate Degree Attainment
by Age 24 by Family Income Quartile
1970 to 1999



Since the early 1970s, the United States has been moving steadily into the human capital economy. In this economy there are abundant, enriching and expanding opportunities for students with college educations. There is little left over for those who try to engage in adult life with a high school education or less. Thus, who gets the higher education needed for success in adult life becomes a paramount public policy issue.

Here we report the results of our analyses of recently released Census Bureau data on higher educational opportunity for dependent 18 to 24 year olds by their family income backgrounds. In the previous issue of OPPORTUNITY, we examined in detail these data for 1999.

Here we update, revise and extend our previous analyses of trends in higher educational opportunity by family income. These data begin in 1970 and now extend through 1999. We last published these data through 1997. The 1998 data were redefined by the Census Bureau, and so we have recently revised previously published data from 1987 through 1997 to conform to the new Census definition of dependent 18 to 24 year olds.

The revised data tell a too familiar and depressing story about the consequences for educational opportunity and attainment for children born into lower family income situations. This is bad luck, not bad choices. At each step in the education pipeline, students born into low income families are least likely to succeed:

- At the first hurdle on the path to a bachelor's degree, students from lowest income families are least likely to graduate from high school.
- Among those who do graduate from high school, students from low income families are least likely to continue their educations in college.
- Among those who make it to college, those from the lowest family income backgrounds are least likely to complete a bachelor's degree by age 24.

In the 1960s and 1970s, public policy sought to intervene in this process and remove barriers to higher education for students born into low and moderate family income backgrounds.

- At the federal level the Higher Education Act of 1965 created Educational Opportunity Grants (now SEOG), outreach programs (TRIO), and in 1972 the Basic Educational Opportunity Grant program (now Pell Grant) was added.
- Many states started their own state need-based grant programs during this era as well.
- And states sought to keep public institution tuition and fee charges to students under control (see following article).

But beginning with the Middle Income Student Assistance Act in 1978, public policy began to lose its focus on students from lower income family backgrounds.

- Federal policy drifted away from its original focus on students from low income families by substituting loans for grants, relaxing need analysis, reducing and virtually freezing the Pell Grant maximum award, enacting tax credits that excluded poor students, providing tax incentives for family savings for college for those with discretionary income available to set aside for future purchases, etc.
- States began to sharply reduce their investment in public higher education in 1980, with public institutions raising tuition charges to students to offset losses in state support.
- Both public and private 4-year institutions began raising the admissions bar in ways that favored students from the top half of the family income distribution, and disfavored students from the bottom half. They also began to award more of their own financial aid resources as non-need based scholarship aid targeted on higher income students who often cannot demonstrate need for financial aid.

The Data

Most of the data used in this analysis

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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are collected by the Census Bureau in the October Supplement to the Current Population Survey. The CPS is a monthly survey of about 50,000 households designed to collect data on employment and unemployment. Supplements to the CPS in October gather additional data on school enrollment, and in March on income and educational attainment.

Jamieson, A., Curry, A. and Martinez, G. (March 2001.) *School Enrollment in the United States - Social and Economic Characteristics of Students*. Current Population Reports. P20-533. Washington, DC: U.S. Census Bureau.

This report is available for downloading from the Census Bureau's website at:

http://www.census.gov/population/www/socdemo/school.html

In particular, the data used here for 1999 came from Table 14 of this report.

In addition to the data from the Census Bureau, we have used data from the 1980 High School and Beyond study (six-year follow-up) to estimate bachelor's degree completion by age 24.

Family Income Quartiles

For this analysis we have divided the population of dependent 18 to 24 year olds into family income quartiles for each year from 1970 through 1999. Note that these are not constant dollar/inflation adjusted intervals. In fact over the 30 year period of this study, the top quartile has seen real gains in incomes, and the bottom quartile has seen real losses.

In 1999 family income quartiles for dependent 18 to 24 year old high school graduates were defined as follows:

Bottom quartile:	below $33,003
Second quartile:	$33,003 to $57,024
Third quartile:	$57,025 to $80,750
Top quartile:	$80,751 and over

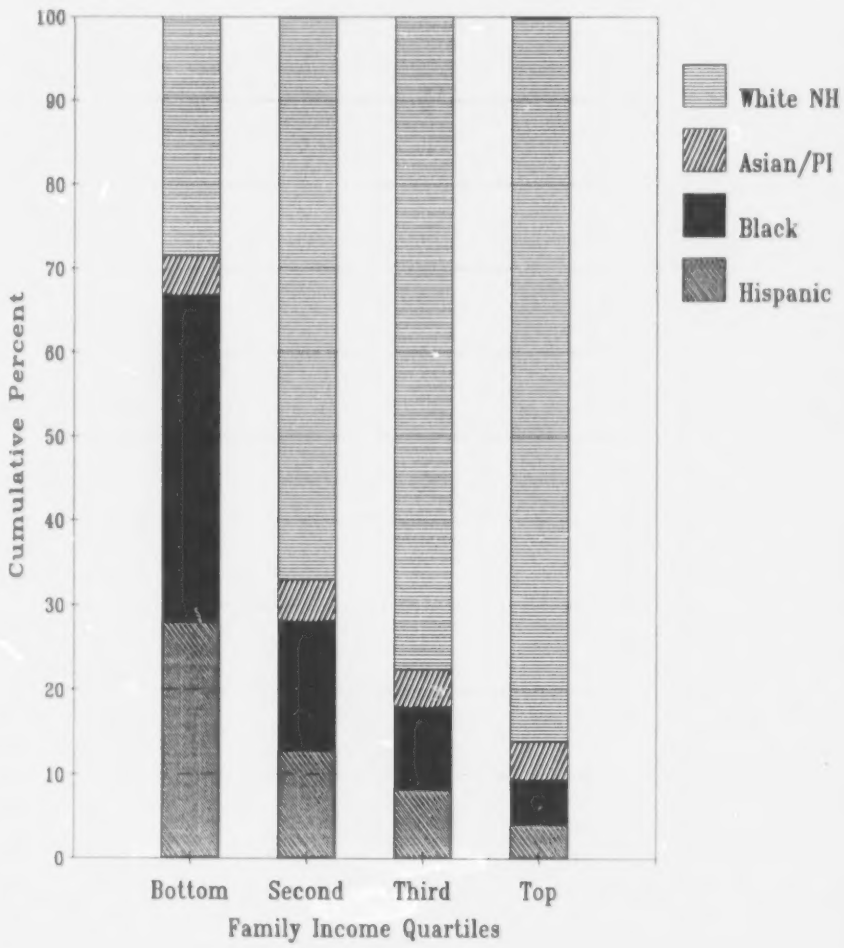
That is to say: exactly one quarter of all dependent 18 to 24 year old high school graduates lived in families in the above quartile ranges.

It is important to note the highly unequal distribution of racial/ethnic groups across these quartiles of family income. For the population in 1999, the racial/ethnic distribution of dependent 18 to 24 year olds was as follows:

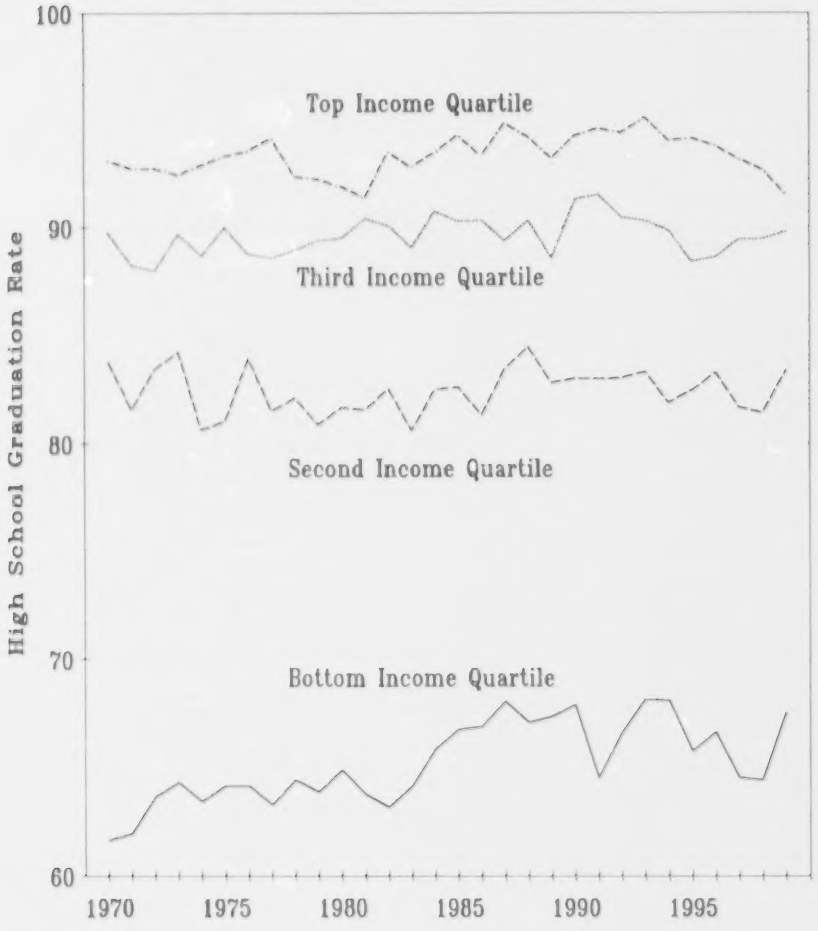
White, non-Hispanic	65.0%
Black	15.9%
Asian/Pacific Islander	4.7%
Hispanic	14.4%

However, blacks and Hispanics were 56.8 percent of those in the bottom quartile, 28.1 percent of those in the second quartile, 18.0 percent of those in the third quartile, and just 9.4 percent of those in the top quartile of family income. In contrast to this, non-Hispanic whites were 38.3 percent of those in the bottom family income

Population Distribution of Dependent 18 to 24 Year Olds by Race/Ethnicity and Family Income Quartiles 1999



High School Graduation Rates by Family Income Quartiles for Dependent 18 to 24 Year Olds 1970 to 1999



quartile, 67.0 percent in the second, 77.6 percent in the third and 86.0 percent in the top quartile. Asian/Pacific Islanders were the most uniformly distributed, having about 4.5 percent of those in each family income quartile.

Expressed another way, median family incomes for dependent 18 to 24 year olds by race/ethnicity in 1999 were:

White, non-Hispanic	$63,743
Black	$29,524
Asian/Pacific Islander	$48,879
Hispanic	$28,485

High School Graduation

In 1999, out of 12.584 million dependent 18 to 24 year olds on whom family income data were available, 10.302 million were reported as high school graduates (or equivalency: GED). Thus 81.9 percent were high school graduates.

The chart on this page shows the proportion of the population of dependent 18 to 24 year olds in each family income quartile that were high school graduates by quartiles of family income for the years 1970 through 1999. In 1999, high school graduation rates were as follows:

Bottom quartile	67.5%
Second quartile	83.4%
Third quartile	89.8%
Top quartile	91.5%

Here, at the first hurdle on the path to a bachelor's degree by age 24, the population's success in educational attainment is already substantially determined by family income origins.

Moreover, these trends show little variation over the last three decades. Between 1970 and 1999, the changes in high school graduation rates were as follows:

Bottom quartile	+5.9%
Second quartile	-0.4%
Third quartile	+0.1%
Top quartile	-1.6%

Most interesting are the changes at the extremes of the distribution. In the bottom quartile of family income, despite being poorer in 1999 than they were in 1970, the high school graduation rate actually increased. And in the top quartile of family income, despite being richer in 1999 than they were in 1970, the high school graduation rate actually declined.

Clearly students from the lowest income families improved their high school graduation rates between 1970 and 1999. Data from other sources suggests this was primarily the result of hard-earned gains by blacks (not Hispanics) over this period.

College Continuation

Of the 10.302 million high school graduates in 1999 among the population of dependent 18 to 24 year olds, 7.464 million or 72.5 percent had enrolled in college. They could have been currently enrolled, or they could have enrolled earlier and were no longer enrolled, but at least they had entered college.

Across quartiles of family income, college continuation rates again varied by family income as follows:

Bottom quartile	56.7%
Second quartile	70.3%
Third quartile	77.0%
Top quartile	85.8%

Here again, the crowd of dependent 18 to 24 year olds is further separated according to the luck of the draw at birth.

As shown in the chart on this page, college continuation rates have fluctuated substantially over the last 30 years. Between 1970 and 1980 the rates trended downward.

But around 1980 they turned upward, at least in the top two family income quartiles. The turn upward began about seven years later--about 1987--in the bottom two quartiles of family income.

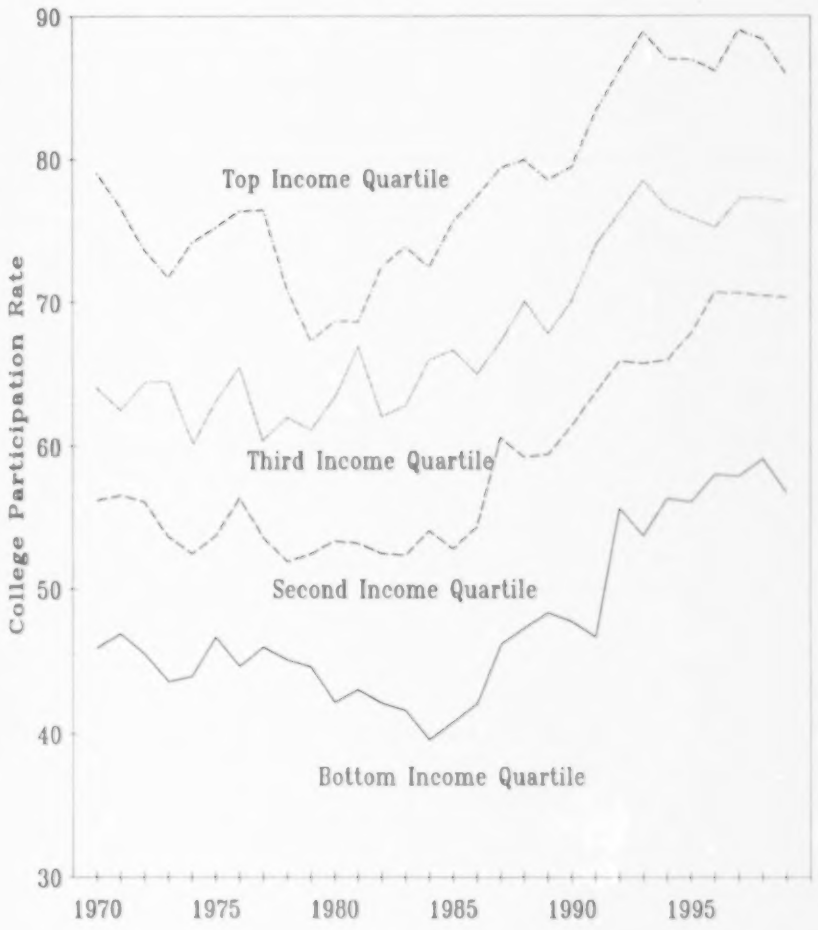
In the 1990s the college continuation rates have been flat in the top two family income quartiles since 1993. They continued to trend upward in the bottom two quartiles to 1996, and have been flat since then.

Because we have been particularly concerned about the reversal in public policy toward under-represented populations that occurred around 1980, the following represents the change in college continuation rates between 1980 and 1999 at each family income quartile:

Bottom quartile	+14.6%
Second quartile	+16.8%
Third quartile	+13.7%
Top quartile	+17.2%

Here there are very significant gains in college continuation rates at all levels of family income over the last two decades. However, as we will see next, these increases calculated from different bases magnify the disparities in educational opportunity across family income levels.

College Continuation Rates by Family Income Quartiles for Dependent 18 to 24 Year Old High School Graduates 1970 to 1999



College Participation

The college participation rate is the proportion of the *population*, not just high school graduates, that reach college. It is the mathematical product of the high school graduation rate and the college continuation rate.

In 1999, of the 12.584 million dependent 18 to 24 year olds, 7.464 million or 59.3 percent reached college. This is the product of the 81.9 percent high school graduation rate and the 72.5 percent college continuation rate in 1999.

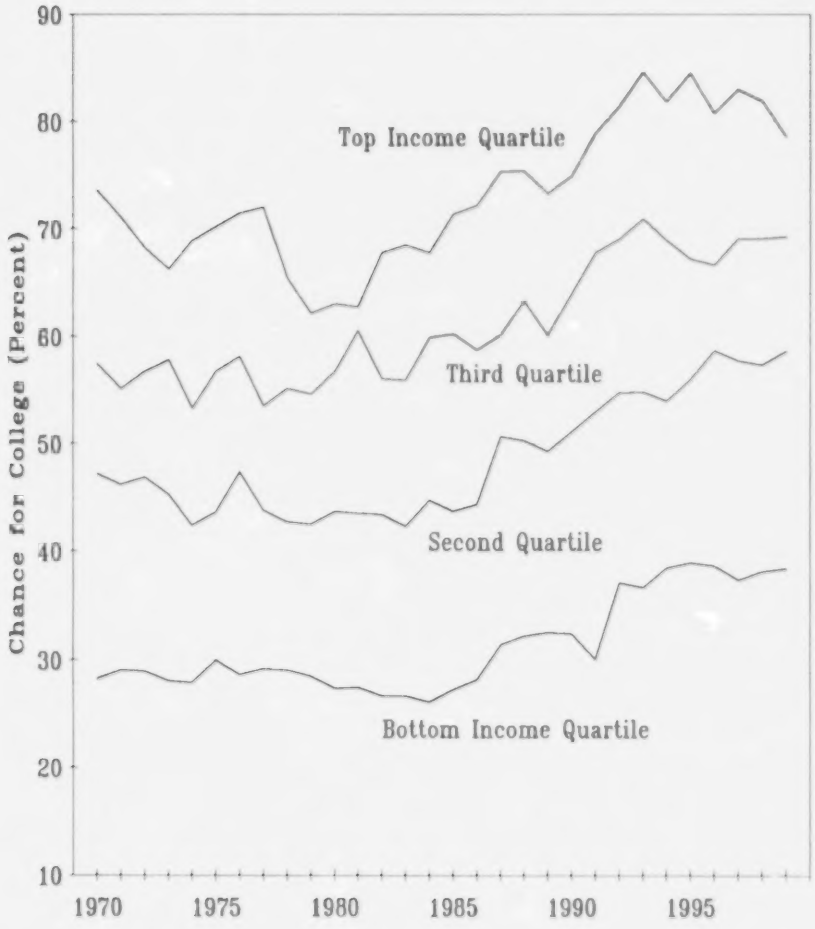
Of course the data are quite different across quartiles of family income. By family income the college participation rate in 1999 was:

Bottom quartile	38.3%
Second quartile	58.6%
Third quartile	69.2%
Top quartile	78.5%

These data are shown in the chart on the following page.

Expressed another way, a student from the top quartile was twice as likely to reach college compared to a student from the bottom quartile.

College Participation for Dependent 18 to 24 Year Olds by Family Income Quartiles in the United States 1970 to 1999



Between 1980 and 1999, the college participation rates increased at all income levels, but more at some than others:

Bottom quartile	+11.0%
Second quartile	+14.9%
Third quartile	+12.4%
Top quartile	+16.4%

Here the growing differentiation between the top and bottom quartiles becomes more apparent. What has happened is that the differences in the high school graduation and college continuation rates are magnified in the college participation rate. As striking as this is, this growing difference pales in comparison to what happens in college, as explained below.

Estimated College Completion

Getting to college after high school is quite an accomplishment, especially for those from the bottom quartile of the family income distribution where less than 40 percent do so. But then the real challenges emerge: financial, academic, and all of the social development that change a child into an adult. Some make it to graduation, but many do not.

What we calculate here is a bachelor's degree completion rate. This is the proportion of those who enter college that complete a bachelor's degree by age 24. We have constructed *estimates* of this proportion. Our estimates are calculated by combining Census Bureau data with data from the six-year follow-up to the 1980 High School and Beyond Cohort.

The Census Bureau data are the subset of dependent 18 to 24 year olds who have completed four years or more of college by family income quartile. The HS&B data were originally bachelor's degree graduation rates by family income intervals. The latter were converted to 1980 family income quartiles and have been used over the period 1970 through 1999. To reveal the underlying trends to these estimates, we have smoothed this rather spiky data with a moving three-year average.

Across all income levels, this estimation technique finds that about 39.6 percent of those that started college will have completed a bachelor's degree by age 24 in 1999.

Of course college graduation with a bachelor's degree by age 24 varies across family income quartiles. In 1999, we estimate that the proportion of 24 year olds that started college who have completed a bachelor's degree by age 24 to be as follows:

Bottom quartile	22.2%
Second quartile	22.2%
Third quartile	36.6%
Top quartile	78.1%

Up to this point the Census data have shown consistent and significant differences across quartiles of family income in high school graduation rates and college continuation rates. But the differences in the above rates between the lowest and highest quartiles of family income are far greater.

The trends over the last three decades,

and in particular over the last twenty years, are particularly striking.

- In the top quartile, the estimated bachelor's degree completion rate rose from 53.4 percent in 1980 to 78.1 percent by 1999.
- In the third quartile the bachelor's degree completion rate *declined* from 37.0 to 36.6 percent.
- In the second quartile the bachelor's degree completion rate *declined* from 23.7 to 22.2 percent.
- In the bottom quartile the bachelor's degree completion rate *declined* from 23.8 to 22.2 percent.

Thus *all* of the gains in bachelor's degree completion rates between 1980 and 1999 occurred only in the top quarter of the family income distribution, above about $81,000 per year family income.

Estimated Bachelor's Degree Attainment

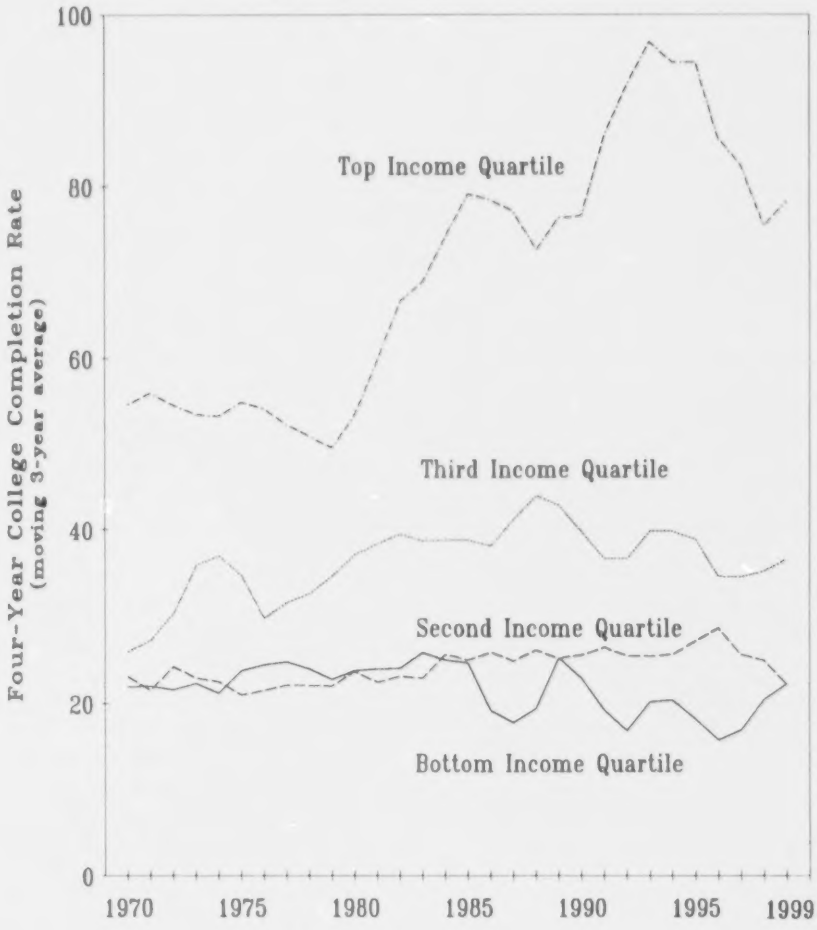
The end product of these high school graduation rates *and* these college continuation rates *and* these bachelor's degree completion rates by age 24 is bachelor's degree attainment by age 24. The chart on the front page of this issue of OPPORTUNITY shows these results by family income quartiles for the period from 1970 through 1999.

Here the final data magnify each and every disparity across income levels. The gaps don't just cumulate, they actually multiply. So by age 24 the differences in degree attainment across family income quartiles are greatest (or worst, depending on your point of view).

In 1999 the estimated bachelor's degree attainment rates by family income were as follows:

Bottom quartile	8.5%
Second quartile	13.0%
Third quartile	25.3%
Top quartile	61.3%

Estimated Bachelor's Degree Completion Rates by Age 24 by Family Income Quartiles for Dependent College Students Who began College, 1970 to 1999



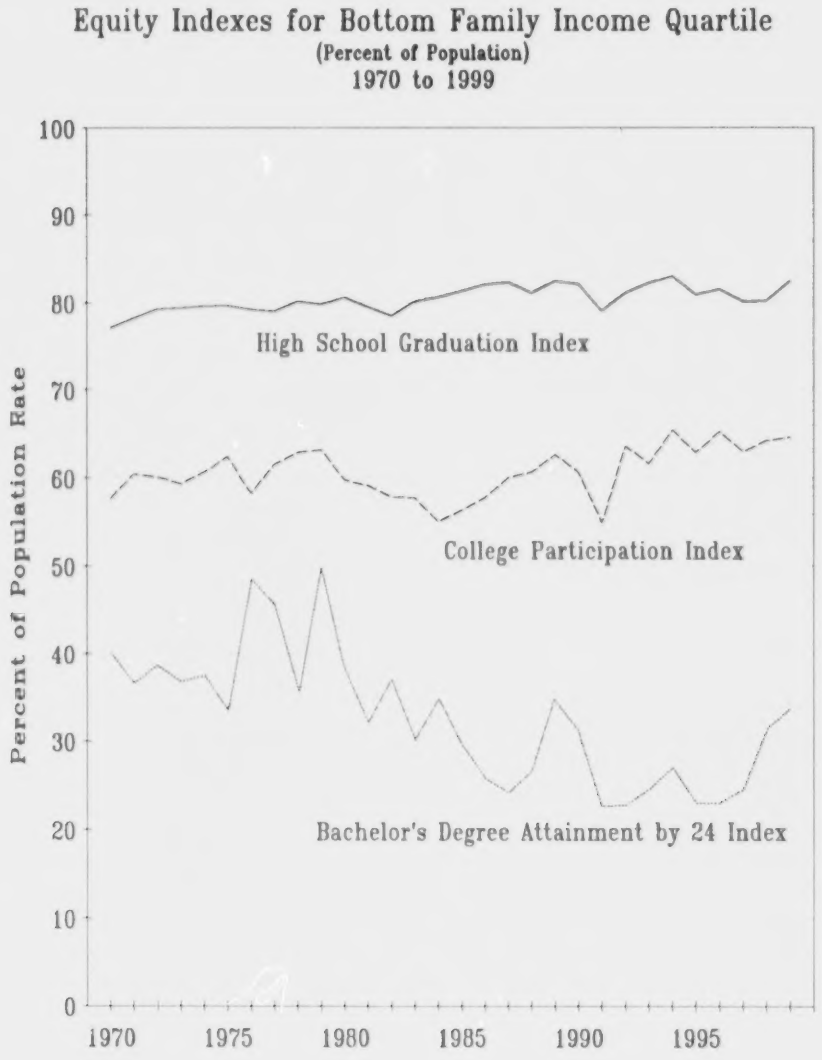
Clearly, the importance of family income is apparent here. A student from the top quartile of family income was about seven times more likely to have a bachelor's degree by age 24 than was a student born into a bottom quartile family income.

Between 1980 and 1999, the bachelor's degree attainment rates varied as follows:

- In the bottom quartile of family income, the bachelor's degree attainment rate increased by 2.0 percent, from 6.5 to 8.5 percent.
- In the second quartile, the attainment rate increased by 2.6 percent, from 10.4 to 13.0 percent.
- In the third family income quartile, the attainment rate increased by 4.3 percent, from 21.0 to 25.3 percent.
- In the top quartile the attainment rate increased by 27.6 percent, from 33.7 to 61.3 percent.

The last twenty years were very good years to be born into a high income family.

Analysis of the trends buried in these bachelor's degree attainment data are especially important to examine to identify when and where conditions



have improved or deteriorated for students from different family income backgrounds.

- In the bottom family income quartile, the high school graduation rate increased slightly between 1980 and 1999. So too did the college continuation rate, up sharply. But the college completion rate declined, thus offsetting a portion of the gains in pre-college factors.
- In the second quartile, the high school graduation rate also increased modestly, and the college continuation increased significantly. But the bachelor's degree completion rate declined slightly, thus taking off some of the gains in high school graduation and college continuation.
- In the third quartile of family income, the high school graduation rate increased very slightly, the college continuation rate jumped sharply and the college completion rate dipped slightly. Thus increase in bachelor's degree attainment is attributable only to the increase in college continuation rates.
- In the top quartile of family income, the high school graduation rate dipped slightly, the college continuation rate surged sharply and the bachelor's degree completion rate also increased sharply. So the increase in attainment is attributed to both continuation after high school and completion once enrolled in college.

Equity Indices

We have constructed equity indices for students from the bottom quartile of family income compared to the population of dependent 18 to 24 year olds. These indices are shown in the chart to the left. Roughly what they say goes as follows:

- *High school graduation.* A student from the bottom quartile of family income has about 80 percent of the chance of a student from the population to become a high school graduate.
- *College participation.* A student from the bottom quartile has about 60 percent of the chance of a student from the population to enroll in college.
- *Bachelor's degree attainment.* A student from the bottom quartile has about 30 percent of the chance of a student from the population to complete a bachelor's degree by age 24.

Significantly, students from the bottom quartile have made important progress on both high school graduation and college participation over the last 30 years. The high school graduation equity index is up from 77.1 to 82.5. Similarly, the college participation equity index is up from 57.6 to 64.6.

The real failure here is in bachelor's degree completion. The equity index is down from 40.1 in 1970 to 33.7 in 1999. All of the decline occurred after about 1980. Clearly public policy to support higher education for low income students deteriorated sharply in the 1980s and 1990s.

Undergraduate Tuition and Fees at State Flagship Universities

1965 to 2001

Public universities and four-year colleges enroll about 5.8 million students, or about 39 percent of the postsecondary enrollment of 14.9 million students in the U.S. Among the 12.3 million undergraduates students, public 4-year institutions enroll 4.6 million students or 38 percent of the total.

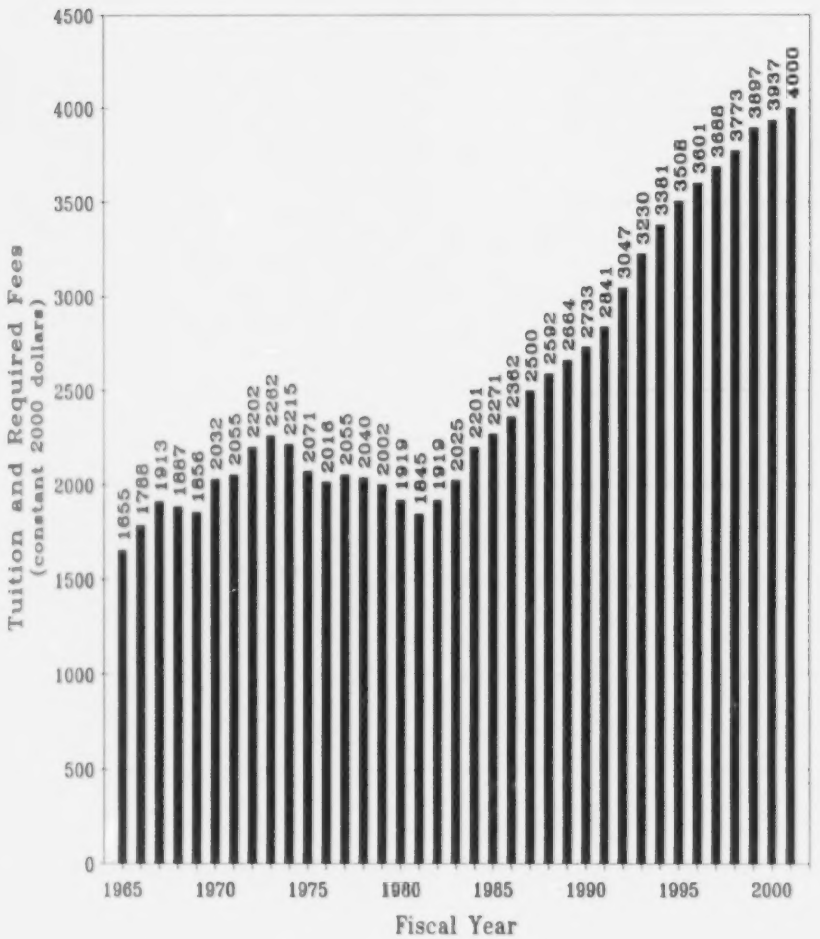
Tuition and fees paid by these students are a vital source of operating revenues for public colleges and universities in the United States. In recent years they have come to provide about a third of the revenues used by public institutions to deliver higher educational services to students. Because students are a principal--if not the main, but not the only--beneficiary of a higher educational investment, states expect students to pay a substantial portion of the costs of their own educations.

During the last two decades, states have substantially reduced state tax effort investment in higher education. Inadequate state funding usually leads public institutions to raise tuition charges to students to offset inadequate state funding. Thus, the costs of public higher education services have been shifted to students since about 1980.

Usually this cost shift from taxpayers to students has been implemented without sensitivity to the financial resources of students to pay the higher tuition and fee charges that result. Very few states assume any responsibility for covering tuition increases for needy students that result from deteriorating state funding.

As the U.S. economy stumbles toward an economic slowdown or possible recession, the experience of public colleges in the early 1980s and again in the early 1990s suggests students will once again face large tuition increases. Here in the Midwest increases of 10 to 35 percent have been mentioned. Ambitious public higher education leaders are very unlikely to see their growth and development plans fully funded by governors and legislators. The alternative revenue source for public higher education, especially since 1980, has been students and their parents through higher tuition charges to students.

Undergraduate Tuition and Required Fees
at State Flagship Universities
FY1965 to FY2001



Undergraduate Tuition and Required Fees at State Flagship Universities, 2000-01

The public flagship university tuition and fee data examined here are only part of a far more complex system of public and private finance of higher education used in the United States. Other important parts of this system include private higher education, student financial aid, tax credits, family savings programs and the roles of federal and local taxpayers and private benefactors of institutions.

Moreover, public flagship universities practice selective admissions. Because of the high correlation between selective admissions criteria and family income, undergraduates attending these campuses usually come from the most affluent families in their states. This relative affluence, compared to other public higher education institutions such as regional and community colleges, means that many students can afford to pay higher tuition and fee rates than those charged. States have recognized this, and tuition rates for resident undergraduates are always higher than they are at regional institutions (except in Ohio).

What our study of public university tuition and fee charges finds may be summarized as follows:

- State flagship campus tuition and fee charges vary widely across the states, from $2,220 at the **University of Nevada at Reno** to $8,288 at the **University of Vermont.**
- Until the early 1980s, states and institutions made serious efforts to hold down tuition and fee charges to students. These increases were generally kept below the inflation rate between 1973-74 through 1980-81.
- About 1980, states began to sharply reduce their state tax dollar investments in higher education for good people, preferring instead to expand state spending on corrections for bad people and health care for poor people.
- Beginning with the 1981-82 academic year, public flagship university tuition and fee charges to undergraduate students began to increase significantly faster than the Consumer Price Index.
- This pattern has held until the present, although the pattern has abated somewhat in the second half of the 1990s while state investment in higher education has stabilized and even strengthened in a few states.

The story told by these data is that the tuition and fee charges assessed to students by public flagship universities are tightly and directly tied to state investment efforts in higher education. When states make strong efforts, undergraduate tuition increases are relatively moderate, often falling below the inflation rate. However, when and where state investment effort in higher education weakens, real undergraduate tuition and fee charges escalate well beyond inflation rates. These and other findings and insights are gleaned from our examination of resident undergraduate tuition and fee rates at state flagship universities.

The Data

The tuition and fee data used in this analysis have been collected and generously shared for more than 25 years by the State of Washington Higher Education Coordinating Board (or its predecessor). In particular, Jackie Johnson, Patty Mosqueda, Kathy Raudenbush and David Tobin have collected these data from states to meet state requirements to set tuition and fee rates in Washington's public colleges and universities. Their reports compiling these data are available free from the HECB in Olympia. We have compiled historical data from our pack rate collection of past issues back to 1974.

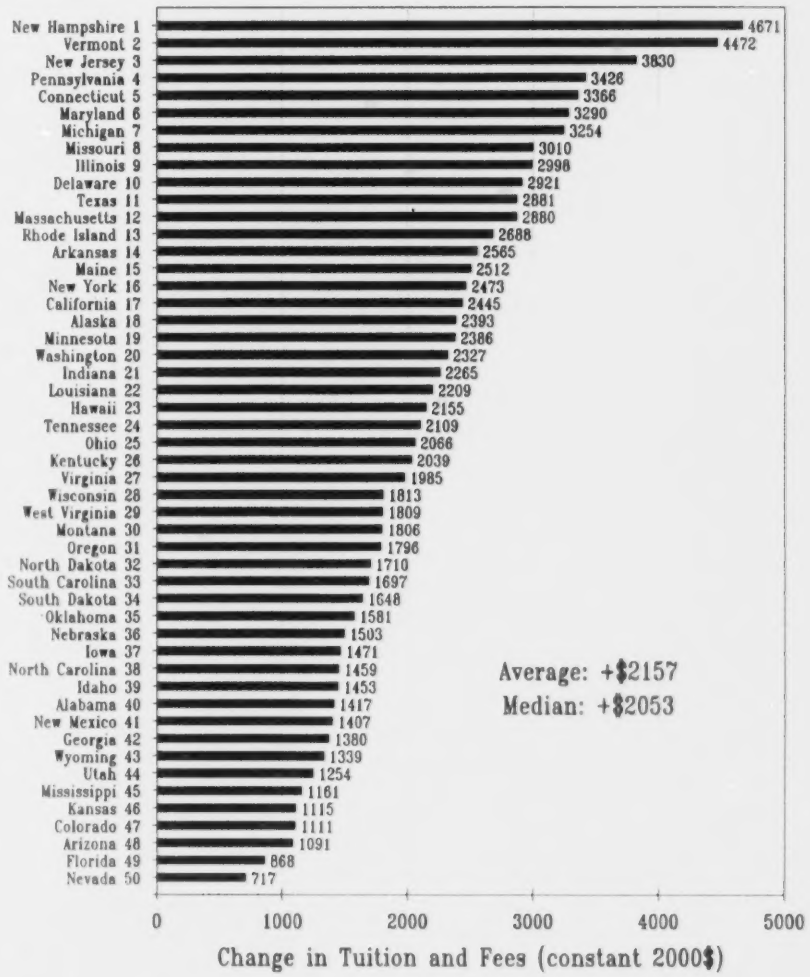
Raudenbush, Kathy, and Tobin, David. (January 2001.) *2000-2001 Tuition and Fee Rates, A National Comparison.* Olympia, WA: Washington State Higher Education Coordinating Board.

The most recent report in this series is available for downloading from the HECB website at:

http://www.hecb.wa.gov/policy/reports.html

In addition, we have combined these tuition and fee data with Consumer Price Index information from the Bureau of Labor Statistics, household income data by state from the Census Bureau, public higher education revenue and finance data collected in the IPEDS surveys and reported by the National Center for Education Statistics and the 1998 report of the National Commission on the Cost of Higher Education. We have also added the four earliest years' data from the NCES data collected in IPEDS and published in the Digest of Education Statistics. These additional resources provide reference and context for the policy studies and interpretation of public flagship university tuition and fee data.

Change in Undergraduate Tuition and Required Fees at State Flagship Universities, 1980-81 to 2000-01



Tuition and Fee Rates

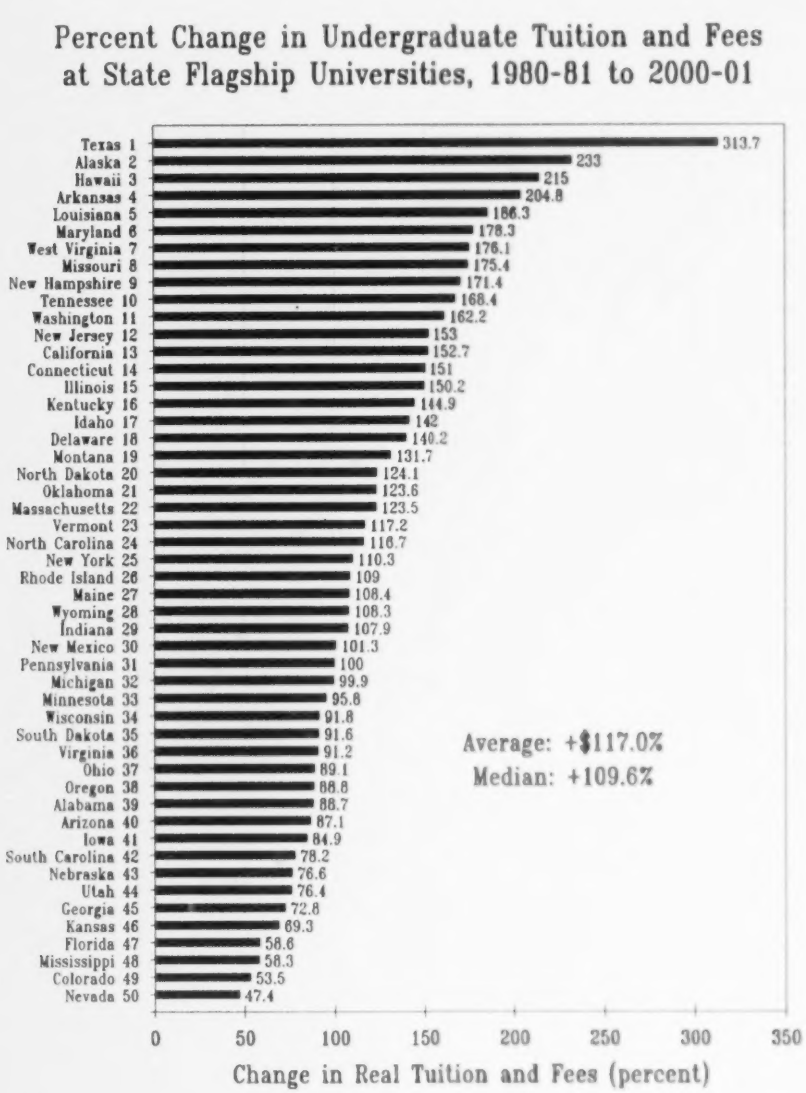
For the academic year 2000-01, the average tuition and required fee charges for resident undergraduates attending public flagship universities across the 50 states was $4000. The median was $3613. The range was from $2,220 in Nevada to $8,288 in Vermont.

Note that students attending flagships face more college attendance costs during their academic year. According to The College Board report on *Trends in College Pricing*, for the 2000-01 academic year the national average costs-of-attendance at a public four-year institutions were:

Tuition and fees	$3,510
Books and supplies	704
Room and board	4,960
Transportation	643
Other costs	$1,521
Total	$11,338

Patterns

There are regional patterns to these



data. Many of the states with the lowest tuition and fee rates are located in the Rocky Mountain region--what we call the cowboy states. Several states in the South also have quite low tuition charges at their flagship campuses. Few of these states have significant state financial aid programs, and few have significant private higher education sectors that typically lobby aggressively for state student financial aid programs.

The states with the highest flagship university tuition charges tend to be located in or near the Northeast region. These are states with strong private colleges and often have the largest state financial aid programs, usually need-based grants. There are no western or southern states among the top 17 states with the highest tuition and fee rates.

In addition to the regional patterns in public university tuition rates, there is also a correlation between tuition rates and median household income. The correlation is +.47. This means that tuition rates tend to be highest in states with the highest household incomes, and lowest in the states with the lowest median household incomes.

Also, in all states (except Ohio) state flagship campus tuition and fee rates are higher than they are for regional campuses. For the 2000-01 school year, the national average for flagship campuses was $4,000, compared to $3,168 at public comprehensive colleges and universities and $1,729 at community colleges.

Analysis of Patterns

There are several useful ways of analyzing the patterns in state flagship university undergraduate tuition and fee charges. The first is to control for the resources of families in each state to pay the posted tuition rates. Clearly states with greater private incomes can afford higher tuitions, and states with lower incomes can afford only lower rates.

Here we use median household income by state. Specifically, we divide the state flagship campus tuition and fee rate for 2000-01 by the average median household income in the state for the 1998 and 1999 calendar years, as estimated by the Census Bureau. For the United States this ratio is 10.9 percent. That is, the average tuition of $4000 is 10.9 percent of the average median household income of $36,712. Across the 50 states this ratio ranges from 5.4 percent in **Nevada** at the **University of Nevada at Reno** to 20.2 percent in **Vermont** at the **University of Vermont**.

The second approach looks at changes in flagship tuition and fee rates between 1980-81 and 2000-01 in two ways. The first way looks at change in constant dollars. The national average change in real tuition and fee rates over the last two decades was an increase of $2,157, and the median increase was $2,053. For the 50 states the real tuition and fee rates increased in all 50 states, from $717 in **Nevada** at the **University of**

Nevada at Reno to $4671 in New Hampshire at the University of New Hampshire at Durham. The smallest increases were recorded in the western and southern states. The largest increases were reported in the northeastern states.

The second way looks at these changes as percentage changes in real dollars between 1980-81 and 2000-01. This is a measure of the political shock of raising tuition rates. The real change was an increase averaging 117.0 percent, with a median increase of 109.6 percent. Across the states by far the largest percentage increase was in Texas where the real tuition and fee increase at the University of Texas at Austin was 313.7 percent. The smallest increase was 47.4 percent at the University of Nevada at Reno.

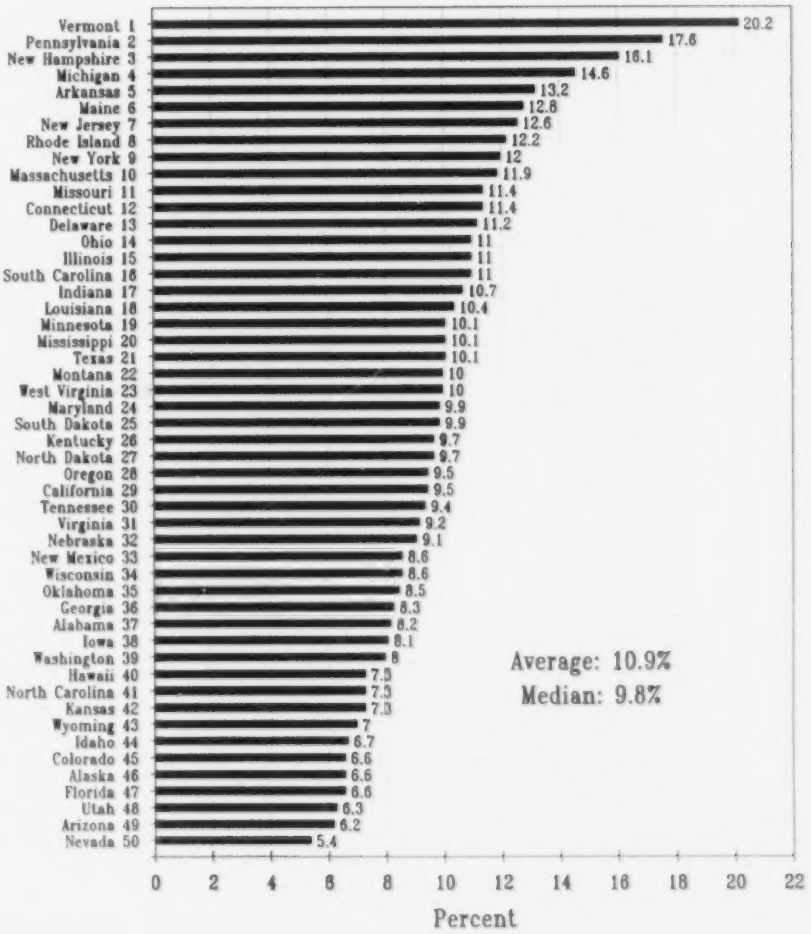
Trends

Between FY1965 and FY1983, undergraduate state flagship university tuition and fee rates at state flagship universities fluctuated around $2000 per year (in constant 2000 dollars). Thereafter, these tuition rates began steady and substantial year-to-year increases (in real terms). By FY2001 these charges had doubled to $4000 per year.

Up until the early 1980s, the annual increases in tuition and the CPI were roughly similar. Inflation rates were high and so were annual increases in flagship university tuition and fees. As a result, real tuition increased by 37 percent between 1965 and 1973, then declined by 18 percent between 1973 and 1981.

However after 1981, and for the last twenty years, annual real increases in flagship campus tuition and fees have been relentless. Between 1981 and 2001 real tuition and fee charges have increased by 117 percent or more than doubled. Between 1981 and 1999, real median household income in the United States increased by just 16 percent.

State Flagship University Tuition and Fees as a Percent of Median State Household Income FY2001



Analysis of Trends

Did public higher education get greedy? After all, students kept enrolling in public higher education institutions at increasing rates despite the higher real tuition and fees charged by these institutions. The income differential between the college-educated and those with a high school education or less increased sharply between 1980 and 2000, at about the rate of real growth in public university tuition and fee charges. So college remained as sound an investment over the last two decades as it had been prior to 1980. It was just more expensive to families.

Some in Congress thought colleges were getting greedy by raising prices charged to students and their families. So in 1997 Congress created the National Commission on the Cost of Higher Education to study "the increase in tuition compared with other commodities and services." The Congressional charge directed that the

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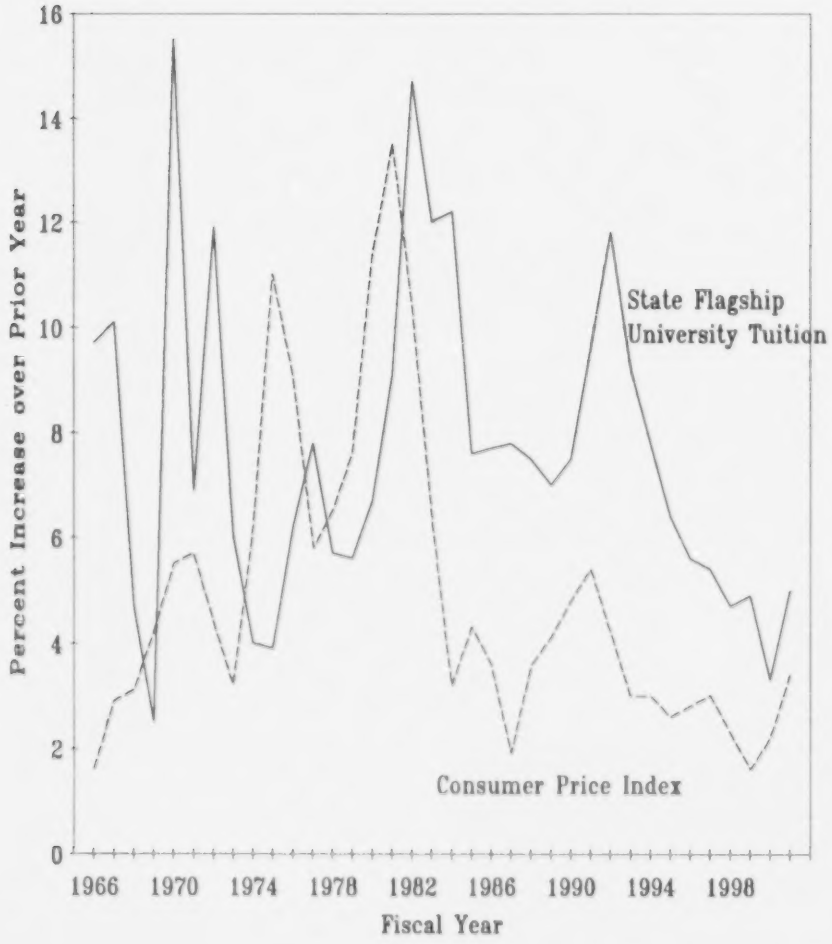
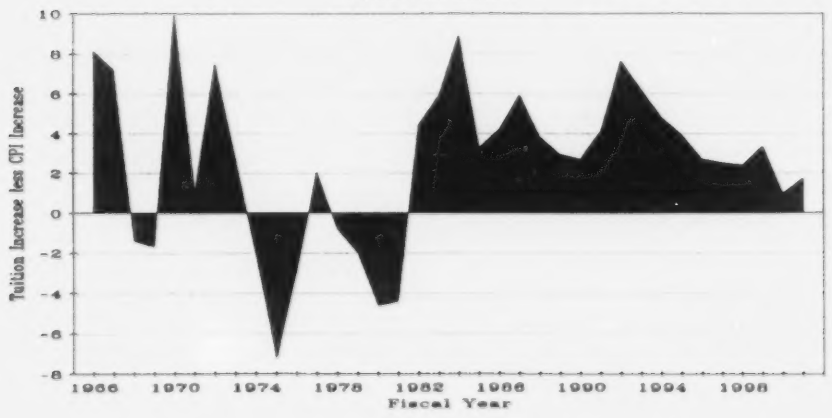
Annual Percentage Increases in State Flagship University Tuition and Consumer Price Index 1966 to 2001



Difference between Annual Percentage Increase in Flagship University Tuition and Consumer Price Index 1966 to 2001



Commission examine eleven specific factors related to cost. Among the factors to be examined was "trends in state fiscal policies that have affected college costs."

Despite the Congressional charge to study state fiscal policies, the Commission chose not to do so. OPPORTUNITY sent materials to this Commission before it convened describing the impact of state funding reductions on increased tuition charges to students. We sent more materials during their deliberations, and we sent them again after a preliminary version of its final report was pre-released. Our materials clearly illustrated the cause and effect of reduced state financial support and the tuition increases that resulted from this loss of state support.

The Commission ignored our submissions. In later discussion with a member of the Commission we were told that the issue was raised but was judged too difficult to address in the brief tenure of the Commission, and was thus ignored in the Commission's final report. Instead the final report chose to focus on six categories of "cost drivers" in higher education: (1) financial aid, (2) people, (3) facilities, (4) technology, (5) regulations, and (6) expectations. In short the Commission addressed a wide array of peripheral and irrelevant issues, and chose to ignore the obvious--but politically difficult--cause of escalating public institution tuition and fee charges: loss of state financial support for state-funded colleges and universities.

The chart on page 15 shows the share of expenditures for student education in public institutions covered by tuition and fees collected from students. This chart spans the years from FY1956 through FY1997. It shows that tuition revenues covered about 16 percent of the costs of educating students in public institutions during the late 1950s and early 1960s, and has risen

steadily to about 33 percent in the mid-1990s. That is increased tuition revenues have offset loss of state funding for educating students.

The chart on this page is very similar to the chart on page 9 which shows the real tuition rates charged undergraduate students at state flagship universities. In fact the charts are so similar that the correlation between the two for the years between 1965 and 1997 is +.98. Q.E.D! Nearly all of the real tuition increases between 1965 and 1997 were driven by the need to replace lost state funding. Shame on the Commission on the Cost of Higher Education for ignoring this obvious, but politically difficult, fact!

Summary and Conclusions

This analysis set out to examine state flagship university tuition and fee charges to state resident undergraduate students. Using data collected and reported by the Washington Higher Education Coordinating Board, these data show very wide variations across states. This state variation has distinct regional patterns, with tuition and fee charges highest in the Northeast and lowest in the West and South.

Of somewhat greater interest here, the inflation-adjusted tuition and fee charges have more than doubled in the last twenty years. These increases have been more in some states than in others, but the increases have been substantial everywhere.

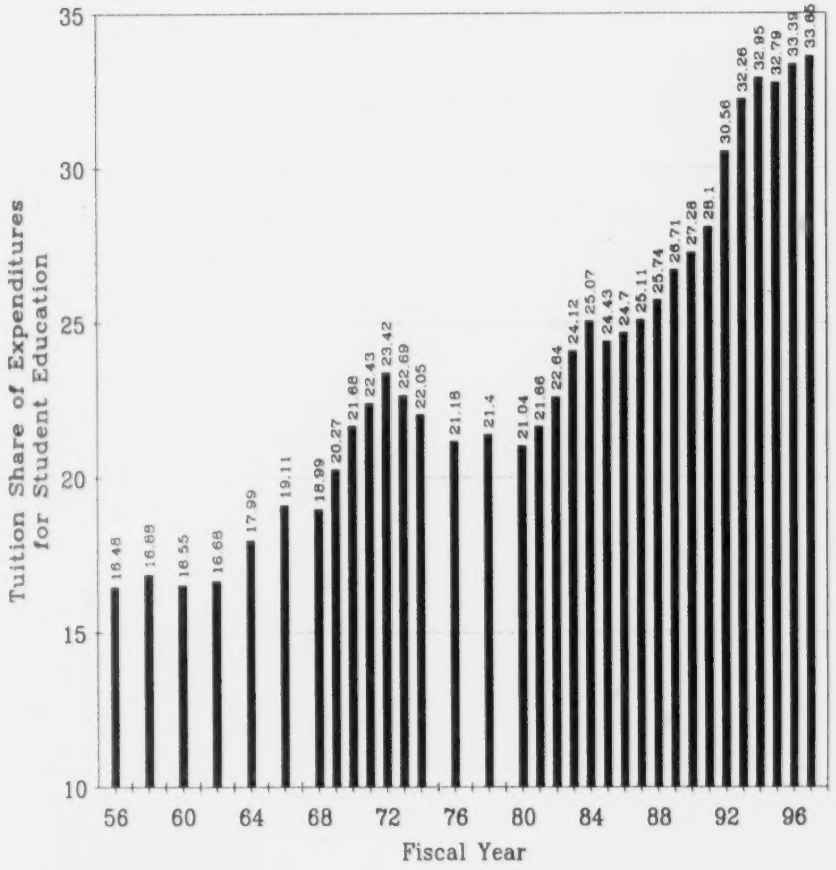
Our analysis of the causes of this large increase since 1980 lead us to this conclusion. The decline in state support for public higher education since 1980 has directly caused the increases in tuition charges to students, particularly but not exclusively in public colleges and universities. States have diverted resources previously committed to higher education to new state budget priorities. This loss of state funding has directly caused public institutions to raise tuition charges to students to offset the loss of state support.

In our analyses of data from the National Income and Product Accounts, the increase in tuition charges has been less than the loss of state resources. Throughout most of the 1990s, higher education's share of Gross Domestic Product has been shrinking. This is analogous to the growing importance and shortage of college-educated workers in the human capital economy.

Equally important is the differential effect of this cost shift from taxpayers to students on students from different backgrounds. The cost shift hurts those from low income families more than it hurts those from high incomes. The cost shift hurts blacks and Hispanics more than it hurts whites.

And in the end, the cost shift from taxpayers to students hurts us all. A growing share of our children are minority and poor. Yet our future prosperity is dependent on getting these minority and poor children to be at least as well educated as those whom they will replace in the labor force as the better educated but shrinking white population ages and retires. We are all in this together.

Tuition Share of Expenditures for Student Education in Public Higher Education Institutions
Fiscal Years 1956 to 1997



How Are We Doing?

We want to hear from you. We want to hear your comments, suggestions, criticisms and thoughts about OPPORTUNITY. Please take a few moments and share with us what bothers or interests you about what we are doing, what others are doing, or what no one is doing but should be doing.

We began publishing OPPORTUNITY in March of 1992. We believed--and still believe--that important information about opportunity for postsecondary education and training never sees the light of day. We believed and still do that if only people who make public policy decisions knew what was really happening they might make better or at least different decisions.

Our focus is and always will be on students and their educational opportunities. Our reading of federal and state higher education laws and programs leads us to the consistent finding that we have a national consensus that vital public interests are served by foster educational opportunity. Our analysis of the economic and demographic processes reshaping our country adds a profound sense of urgency to fulfilling these national commitments. And our analyses of educational data lead us to believe we have a very long way to go to meet our needs and achieve our potential.

Over the years we have often seen heard stories and seen evidence that issues we analyzed and reported in OPPORTUNITY influenced public policy making, both in Washington and in many states. We would like to think at least a few more young people got their chance at a higher education because of these better informed policy decisions.

But we also know we often don't know what you know. You have experiences and insights from your work in higher education that we have not had. Maybe we have been helpful, or introduced you to information you found helpful. Tell us about it.

But we need to grow too. We need ideas from you about what we have done and what we should be doing. Please take a few minutes to complete the survey enclosed in this issue of OPPORTUNITY and mail it back to us. If the survey is missing, go to our website and submit your comments, suggestions, criticisms, etc. Go to:

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College Continuation Rates for Recent High School Graduates 1959 to 2000

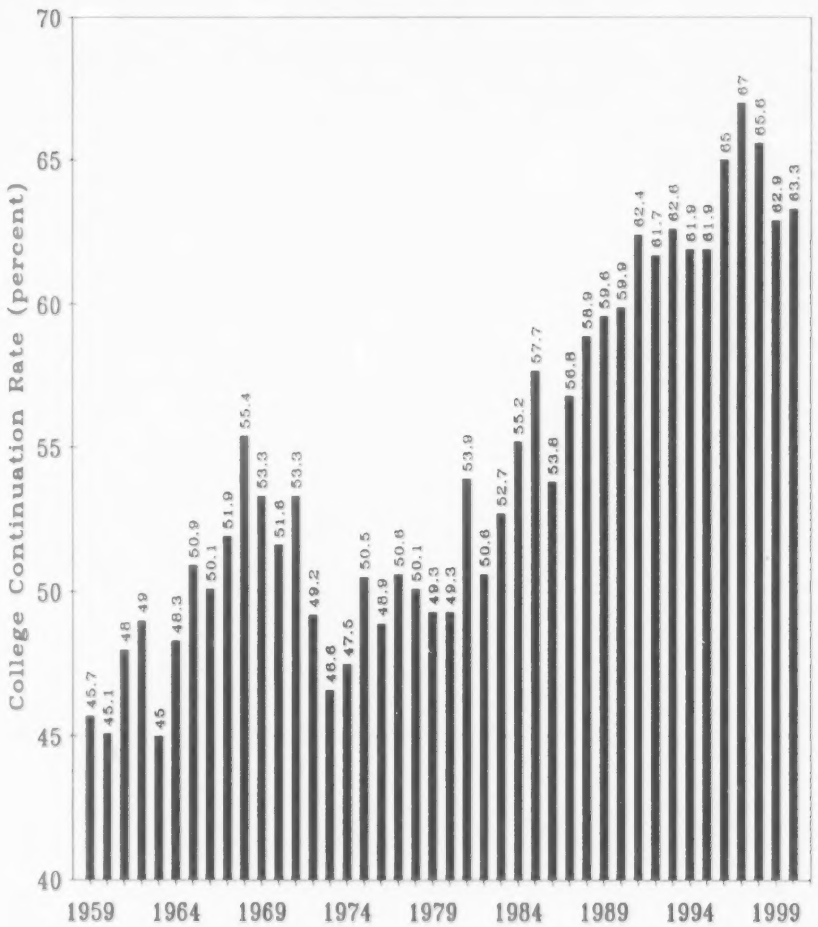
In October of 2000, 3,271,000 people who had been enrolled in high school the previous fall were no longer enrolled. Of this total, 2,756,000 or 84.3 percent were high school graduates or GED recipients, and 515,000 or 15.7 percent were high school dropouts.

Of those who had graduated from high school, 63.3 percent were enrolled in college. This is the college continuation rate for recent high school graduates. Of the 2,756,000 public and private high school graduates, 1,745,000 were enrolled in a public or private college somewhere in the United States. Expressed another way, 53.3 percent of those who had been in high school in October 1999 both graduated from high school and continued their education in college by October 2000. They were college participants.

Of those reaching college:

- 1,156,000 or 66.2 percent were enrolled in four-year colleges, while 589,000 or 33.8 percent were enrolled in two-year colleges.
- 1,592,000 or 91.2 percent were enrolled full-time while 154,000 or 8.8 percent were enrolled part-time.

College Continuation Rates
for Recent High School Graduates
1959 to 2000



Generally, four-year colleges draw their full-time undergraduate enrollments directly out of high school, while community colleges will attract more later entrants into college. Thus the data presented here are particularly important to four-year colleges and universities, both public and private. They are also particularly important to students seeking bachelor's degrees because the most direct route to that bachelor's degree is to attend college directly after high school, full-time, at a four-year institution.

By demographic breakdowns of the population, the 2000 college continuation rates for recent high school graduates were as follows:

Men	59.9%
Women	66.2%
White, non-Hispanic	65.7%
Black	56.2%
Hispanic	53.0%
Other (mainly Asian)	73.7%

The October 2000 college continuation rate of 63.3 percent is up slightly from 62.9 percent in 1999, but below the 1998 rate of 65.6 percent and well below the peak of 67.0 percent reached in 1997, the year before President Clinton's Hope and Lifetime Learning Tax Credits were enacted.

The decade of 1990s was not a good one for gains in the rate at which recent high school graduates continued their educations in college the following fall. By decade, the changes were as follows:

1960 to 1970	+ 6.5%
1970 to 1980	- 2.3%
1980 to 1990	+ 10.6%
1990 to 2000	+3.4%

In fact, between 1991 and 2000 the college continuation rate increased by a statistically insignificant 0.9 percent.

The 1990s was a decade of extraordinarily bad policy making regarding college affordability at the federal, state and institutional levels. The policies of the 1990s were bad because they were inefficient, ineffective and misdirected. New policy initiatives were directed mainly toward students from middle to high family income backgrounds where research has found price and financial aid impact student enrollment decisions least, if at all.

- Two major new policy initiatives--Georgia's HOPE Scholarship Program (1992) and Clinton's Hope and Lifetime Learning Tax credits (1997)--deliberately excluded students from low-income families from eligibility (Georgia has recently removed this exclusion from its HOPE scholarship eligibility, but Clinton's exclusion of those too poor to pay federal income taxes still stands in law).
- Many states created merit based scholarship initiatives, following Georgia's initiative. These programs strongly favor students from high income families. So do state pre-paid tuition programs.
- Institutions shifted their own financial aid resources up the family income scale in zero-sum competition with other institutions for students who were college-bound anyway.

Much of the decade of the 1990s saw wasted policy opportunities and financial resources, continuing a deterioration in effective public policy that began with the Middle Income Student Assistance Act in 1978, continued with budget decisions made in the early 1980s, worsened with the 1986 and 1992 Education Amendments, and on and on.

Those left out of this pathetic policy picture of political pandering were usually those most in need of financial aid to attend college: those from low and moderate family income backgrounds. There were a few positives: some modest restoration of Pell Grant maximum award purchasing power, and California's recommitment to its need-based state grant programs. But on the whole it was a disgraceful decade of policy making.

Were it simply a matter of social justice, it would just look bad for the new Democratic approach of those third-way Democrats like Clinton, Gore and Miller who assumed the political support of the left and sought the political middle and right. George Bush's "compassionate conservatism" was the Republican response: assume the political right and pursue the political middle. So far his commitment to financial aid appears

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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very weak.

But this looks just as bad for the fiscal conservatives. Here we have huge expenditures (the Hope and Lifetime Learning tax credits were estimated to cost about $7 billion per year) with no gain in college continuation rates. In fact the college continuation rates for recent high school graduates dropped sharply in the first two years that these tax credits were in place and has not yet regained that loss.

The combined political behaviors of both political approaches look mostly like shameless political pandering and groveling for votes and not effective policy making. Their impact on higher educational opportunity has been minimal, and in the most egregious cases has been measurably negative.

Neither political approach has produced results. Much political smoke, but no measurable fire in terms of gains in educational opportunity. The effective policy-making processes of the 1960s and 1970s were submerged by political processes that have yet to show measurable gains in higher educational opportunity.

In the following analyses we examine the most recent release of data collected by the Census Bureau from the October 2000 Current Population Survey, and published by the Bureau of Labor Statistics. These data have been reported since 1959. They provide an invaluable long-term perspective on the transition from high school into college.

The Data

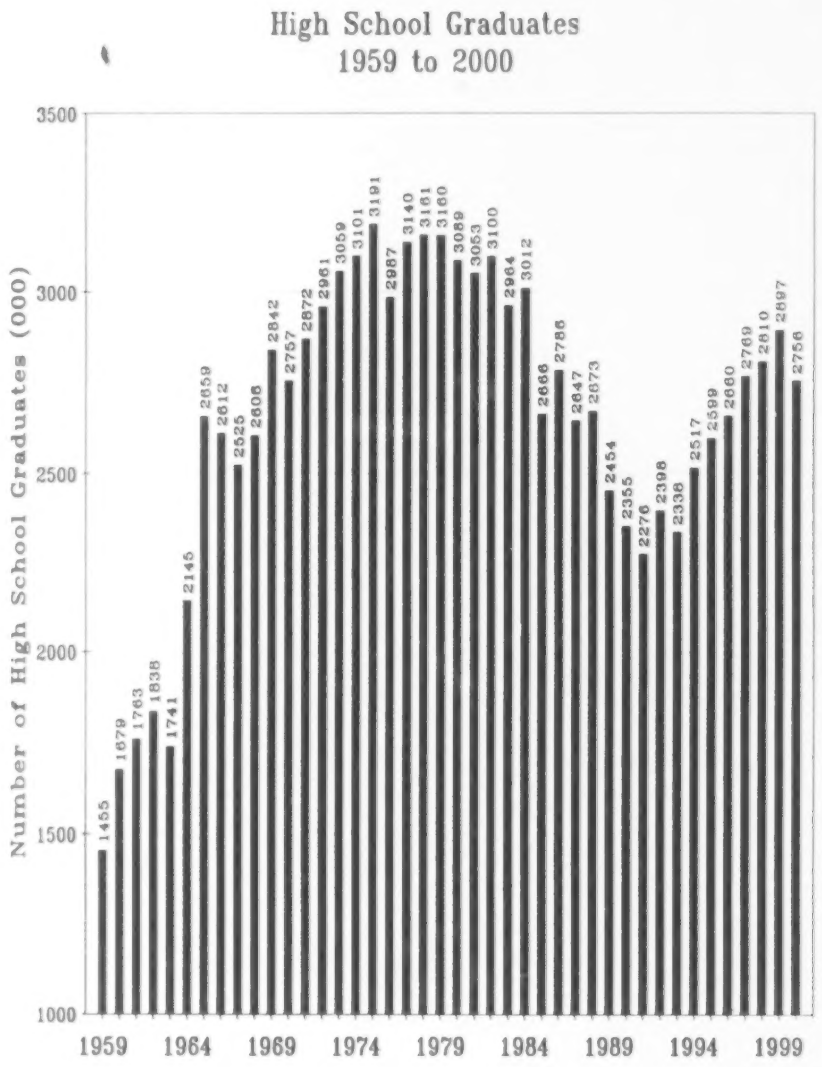
All of the data used in these analyses were collected in the October Current Population Survey (CPS) between 1959 and 2000. The monthly CPS is administered by the Census Bureau mainly to gather data on employment and unemployment among the civilian, noninstitutional population in the United States. Supplements added to the October and March CPS collect additional data on school enrollments and educational attainment, respectively. Data reported by BLS and examined here refer to the population between the ages of 16 and 24 years.

The sample size for the CPS is about 50,000 households. The survey is conducted during the week of October that contains the 12th of October. The survey is limited to the civilian, non-institutional population of the United States.

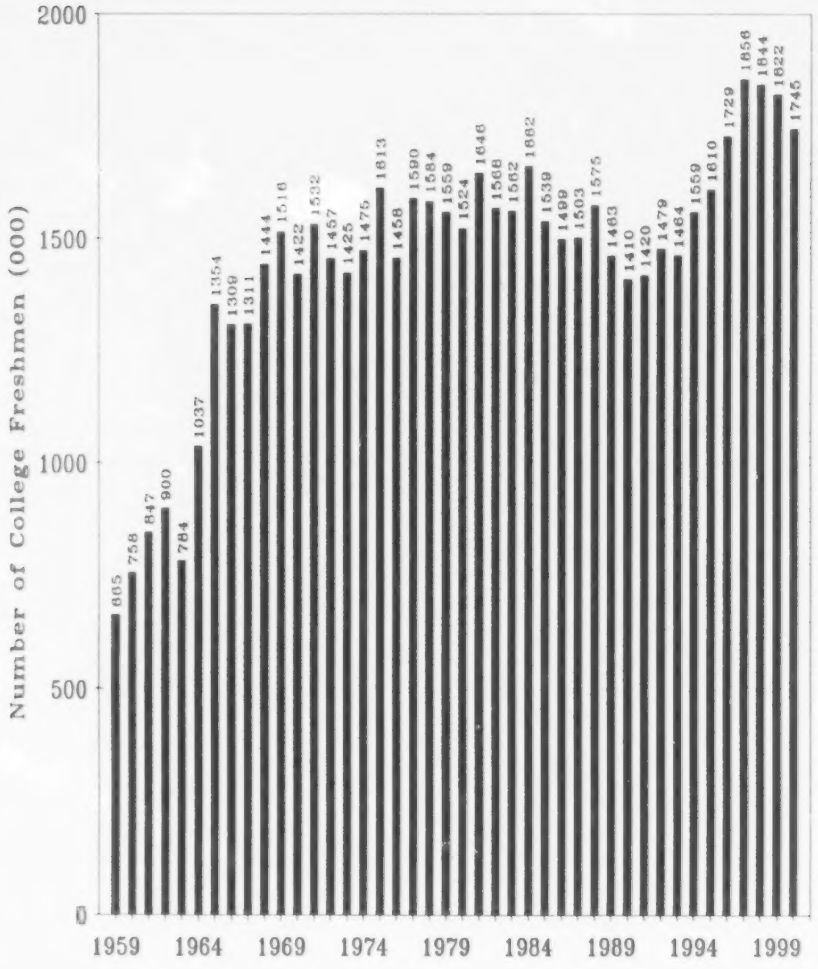
The data used in this analysis appear in a press release available from the Bureau of Labor Statistic's website at:
http://stats.bls.gov/news.release/hsgec.nr0.htm

Population Data

In October of 2000 there were 3,271,000 people who had graduated from or dropped out of high school during the previous 12 months. Of the total, 2,756,000 were graduates



College Freshmen Who Were Recent High School Graduates
1959 to 2000



and 515,000 were dropouts.

The number of 2000 high school graduates was down by 4.9 percent from the 2,897,000 reported for 1999. This dip corresponds to a 1.1 percent dip in live births that occurred between 1982 and 1983. Because the number of live births continued to increase through 1990 (and has since declined slightly), the number of high school graduates will increase to about 2007 then decline slightly and fluctuate. The number of high school graduates tracks very closely with the number of live births 17 years earlier.

More disturbingly, the number of college freshmen who had graduated from high school in 1999-2000 declined for the third year in a row. The number of freshmen peaked at 1,856,000 in 1997, and so has declined by 111,000 or by 6.0 percent since that year while the number of high school graduates has decreased by 0.4 percent during the same period.

The National Center for Education Statistics' most recent projection of high school graduates shows the number of public and private high school graduates peaking at 3,153,000 in 2008. This is an increase of 14.4 percent over 2000 high school graduates.

Of course there will be differences across the states in the changes. Between 1998 and 2010, NCES projects changes in public high school graduates in the ten largest states as follows:

California	+29.5%
Texas	+17.0%
New York	+9.3%
Pennsylvania	+5.8%
Illinois	+20.0%
Ohio	-0.8%
Florida	+32.0%
Michigan	+4.0%
New Jersey	+23.4%
Georgia	+30.4%

College Continuation

As shown in the chart on page 1, in 2000 the college continuation rate for recent high school graduates was 63.3 percent. Out of 2,756,000 1999-2000 public and private high school graduates (or equivalents), 1,745,000 were enrolled in college.

The 2000 college continuation rate was up insignificantly from 62.9 percent in 1999, but down significantly from 65.6 percent in 1998 and the peak of 67.0 percent in 1997. The 2000 level was about the same as the rate reached in 1991 of 62.4 percent.

As the chart on page 1 shows, following the creation of what we now call the Pell Grant program in the 1972 Education Amendments (implemented in the 1973-74 academic year), college continuation rates increased substantially. In 1973 just 46.6 percent of the recent high school graduates were enrolled in college. This rose to 62.4 percent by 1991, but has remained about flat since then.

The significance of the 15.8 percentage point increase in the college continuation rate between 1973

and 1991 can be clearly shown. In 1991 1,420,000 recent high school graduates reached college. But if they had continued at the 1973 rate, just 1,061,000 would have reached college. The increase in the CCR added 359,000 freshmen in 1991, and 461,000 in 2000.

Of course, if the college continuation rate had continued to increase after 1991 to, say, 70 percent by 2000, then there would have been 184,000 additional freshmen enrolled beyond the 1,745,000 that actually made it.

The lack of continued growth in the college continuation rate after 1991 is beyond our ability to explain here. However, we do note the sharp decline in the college continuation rate after 1997, the year President Clinton's Hope and Lifetime Learning Tax Credit program was enacted. This was the first federal program to help families finance college attendance costs that excluded poor people from eligibility. None of its benefits were needs tested, and much of the program was frankly targeted at affluent potential voters.

In fact most of the larger changes in the federal, state and institutional financial aid system in the 1990s were not directed toward meeting student need at all. The resulting record of no growth in college continuation rates after 1991 speaks for itself.

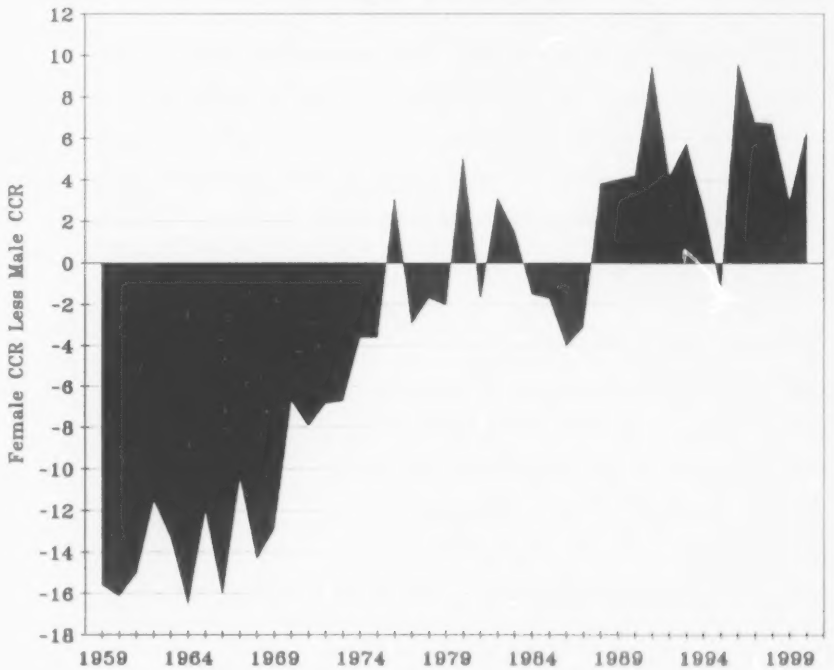
Gender

The top chart on this page shows the college continuation rates for male and female recent high school graduates between 1959 and 2000. In 2000 the rates were 59.9 percent for males and 66.2 percent for females.

Between 1959 and 2000 the CCR for males increased from 54.2 to 59.9 percent, or by 5.7 percentage points. For females the increase was from 38.6 to 66.2 percent, or an increase of

College Continuation Rates by Gender
for Recent High School Graduates
1959 to 2000

Difference Between College Continuation Rates by Gender
for Recent High School Graduates
1959 to 2000



27.6 percentage points.

The second chart on the previous page shows the difference between the male and female college continuation rates over the last four decades. Through the late 1960s the college continuation rate for women stood about 14 percent below the rate for males. Then after 1969 it quickly closed and between 1976 and 1987 they were roughly equal. Finally in 1988 the CCR for women pulled ahead of men and for most of the last thirteen years has stood between four and nine percent above the male rate. In 2000 it was 6.3 percent above the male rate.

Race/Ethnicity

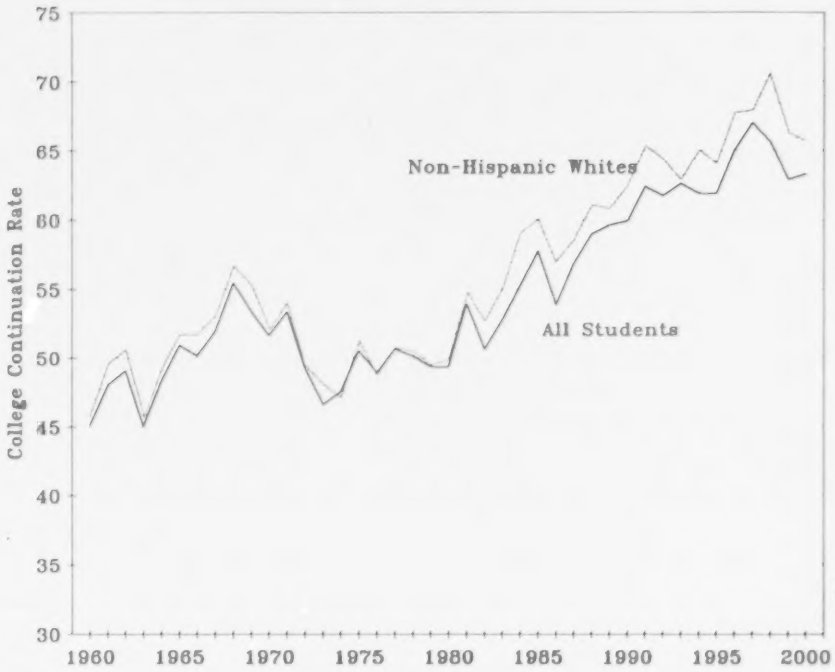
The Bureau of Labor Statistics publishes data for whites, blacks and Hispanics (who are an ethnic group and may be of any race, but are overwhelmingly white). To provide a more complete picture of college continuation behavior by race/ethnicity, we have constructed four racial/ethnic groups as follows:
white, non-Hispanic
black
Hispanic
other race (mainly Asian)

For each of these groups we compare college continuation rates for the available years of data to the college continuation rate for all students. The difference between the rates is plotted in the second chart and illustrates the advantage or disadvantage for each racial/ethnic group compared to the population. The trends in these data are particularly important.

White, non-Hispanic. In October 2000 the college continuation rate for non-Hispanic white high school graduates was 65.7 percent, compared to 63.3 percent for the population of recent high school graduates.

Non-Hispanic whites comprised 69.6 percent of the population in 2000, and

College Continuation Rates for All Students and White Non-Hispanic High School Graduates 1960 to 2000



Difference Between White non-Hispanic and All Students College Continuation Rates 1960 to 2000

thus drive most of the college continuation rate for the population. However, in 1976 non-Hispanic whites comprised 83.3 percent of this population. Thus non-Hispanic whites constitute a shrinking majority of the high school graduate pool, and thus a declining influence on the college continuation rate for the population of high school graduates.

Between 1960 and 2000 the college continuation rate for non-Hispanic white recent high school graduates increased from 45.8 to 65.7 percent. The difference between this rate and the rate for the population increased from about one percent in the 1960s to two to three percent since the mid 1980s.

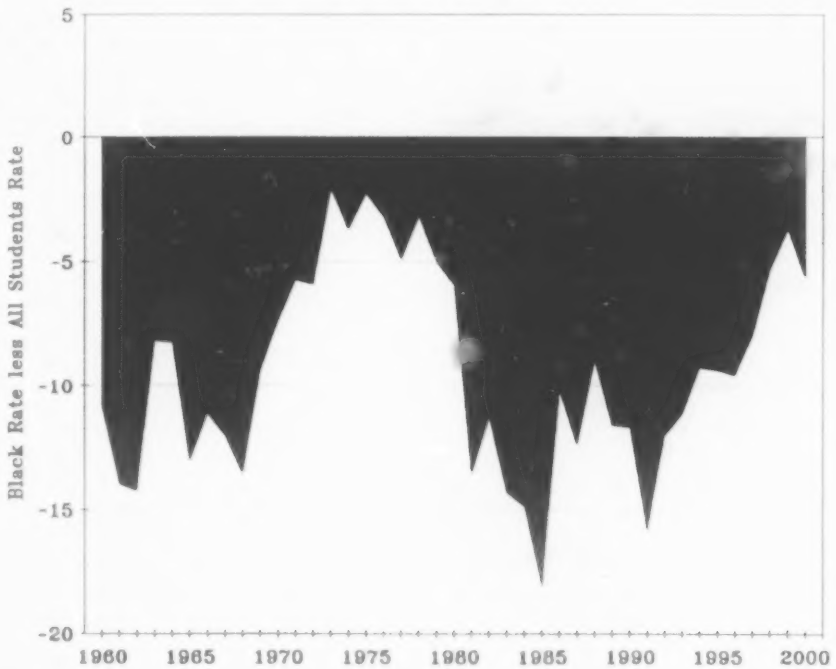
Blacks. In 2000 the college continuation rate for blacks stood at 56.2 percent, compared to 63.3 percent for the population of recent high school graduates. The 2000 rate was down from the 1999 rate of 59.2 percent, which in turn was below the peak rate of 62.1 percent reached in 1998.

In 2000 blacks were 14.7 percent of the high school graduates in the U.S. In 1976 they were 10.7 percent of the total of recent high school graduates.

In the charts on this page we have plotted a line showing the three-year moving average through these data points for blacks to highlight the underlying trend and obscure the fluctuations of statistical noise due to sampling. These charts show that blacks have always lagged the population in college continuation rates. However, compared to the population blacks have fared better during some years than they have during others. Blacks fared relatively poorly during the 1960s and again in the 1980s through the mid 1990s. But blacks have fared relatively well during the 1970s and again in the late 1990s. Between 1983 and 1998 the

College Continuation Rates for All Students and Black Recent High School Graduates 1960 to 2000

Difference Between Black and All Students College Continuation Rates 1960 to 2000



college continuation rate for recent black high school graduates increased from less than 40 to about 60 percent.

Hispanics. In October 2000 the college continuation rate for Hispanic high school graduates was 53.0 percent, compared to a CCR for all recent high school graduates of 63.3 percent.

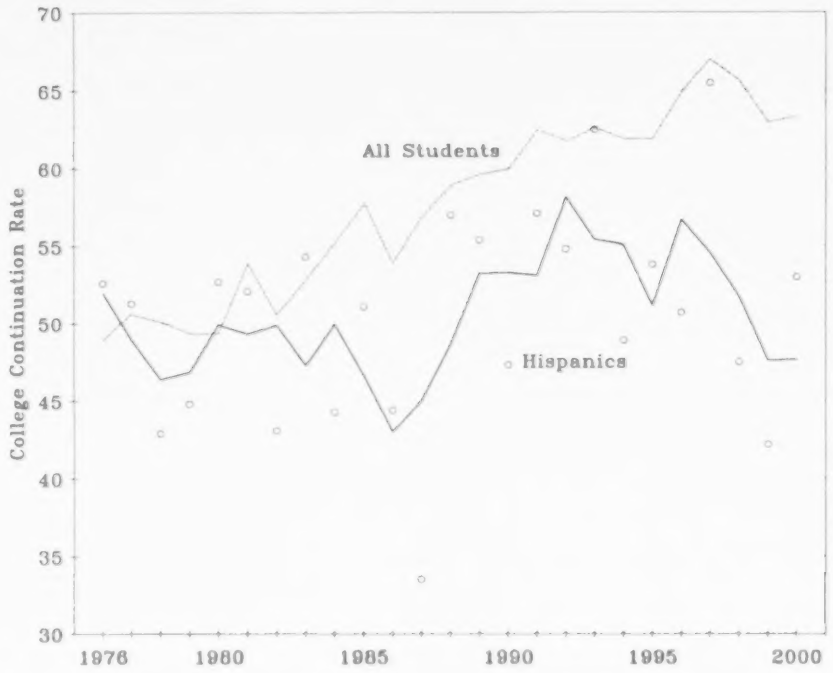
These data are particularly volatile (large standard errors due to small sampling in the Current Population Survey). Thus year-to-year fluctuations in the Hispanic data are almost meaningless. What is important is the trend line shown in the top chart on this page. Using the trend line, the college continuation rate in 2000 was somewhat below where it had been in 1976 and throughout most of the 1980s.

The difference between the Hispanic and population college continuation rates is shown on the second chart on this page. Clearly, compared to the population, Hispanic college continuation rates have fallen steadily farther behind the rate for the population. In the mid 1970s, Hispanics were about equal to the population. By 2000 they were a good 15 percentage points below the population. Between 1976 and 2000 the college continuation rate for the population increased, but is declined slightly for the Hispanic population.

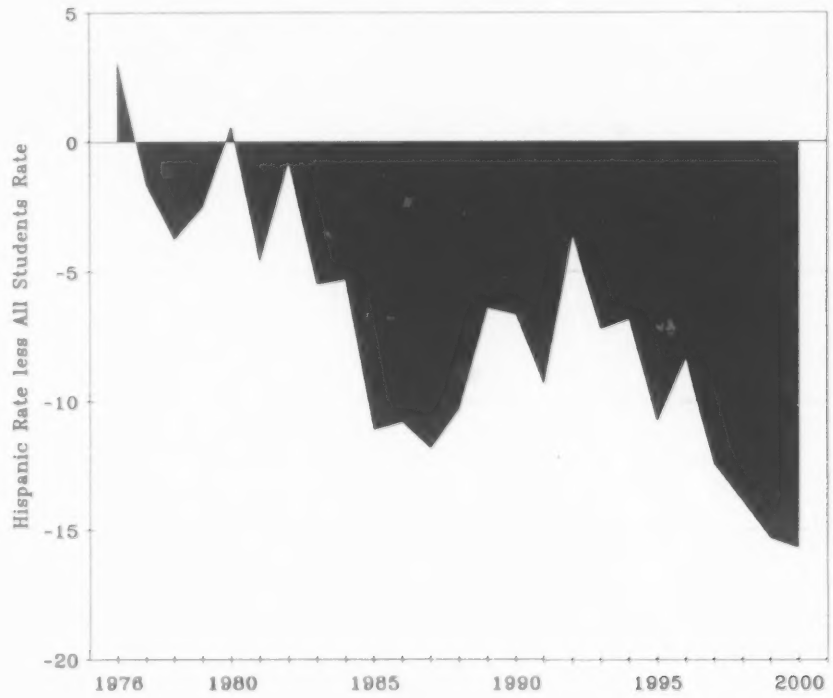
There is no way to sugar-coat the seriousness of this finding. Whites and blacks have made progress while Hispanics have not. Thus compared to whites and blacks, Hispanics have fallen seriously behind others and continue to do so.

Hispanics made up 10.9 percent of the high school graduates in 2000, compared to 5.1 percent in 1976, the first year that the Bureau of Labor Statistic reported these data. The 1998 projections of high school

College Continuation Rates for All Students and Hispanic Recent High School Graduates 1976 to 2000



Difference Between Hispanic and All Students College Continuation Rates, 1976 to 2000



graduates prepared by the Western Interstate Commission on Higher Education indicate that 19.0 percent of all public high school graduates will be Hispanic by 2012.

Clearly, the lack of progress in college participation (and high school graduation) by young Hispanics will have adverse economic consequences both for these young Hispanics themselves, their families and the communities and states in which they live. But this lack of educational progress within this rapidly growing share of the U.S. population will have adverse economic and social impacts on the country as well unless it is effectively addressed now.

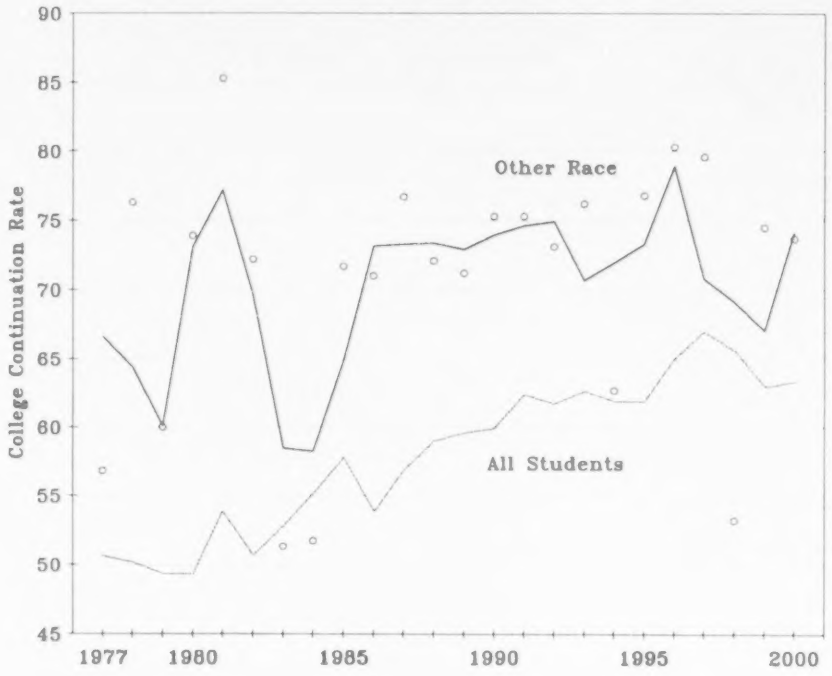
Other race. By deducting white and black from total data, the remaining data describe those from "other race." This calculated residual includes Asians and American Indians. By far the larger share of this group is the Asian population.

In 2000 those of other race were 4.8 percent of all high school graduates. In 1977, the first year that permit this calculation, the other race category was 1.2 percent of the high school graduate total.

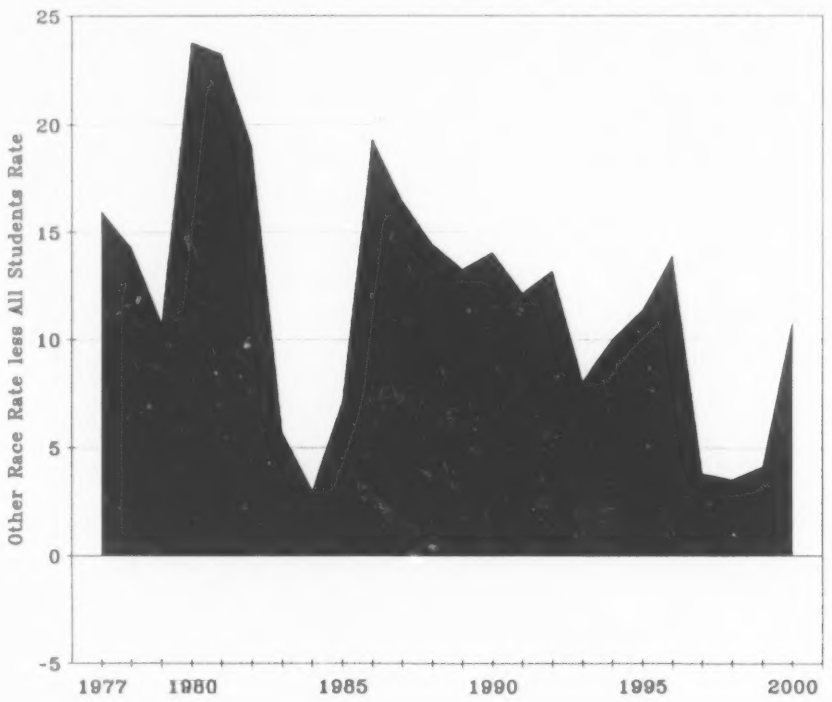
In 2000 73.7 percent of those in the other race category continued their education after high school in college, compared to 63.3 percent for the population. As shown in the top chart on this page, those in the other race category have always continued their educations after high school in college the following fall at rates well above the college continuation rate for the population.

However, this advantage in college continuation appears to be narrowing. Up until 1996 the CCR for other race averaged 10 to 15 percentage points above the rate for the population. Since 1997 the advantage has narrowed, largely through gains in the

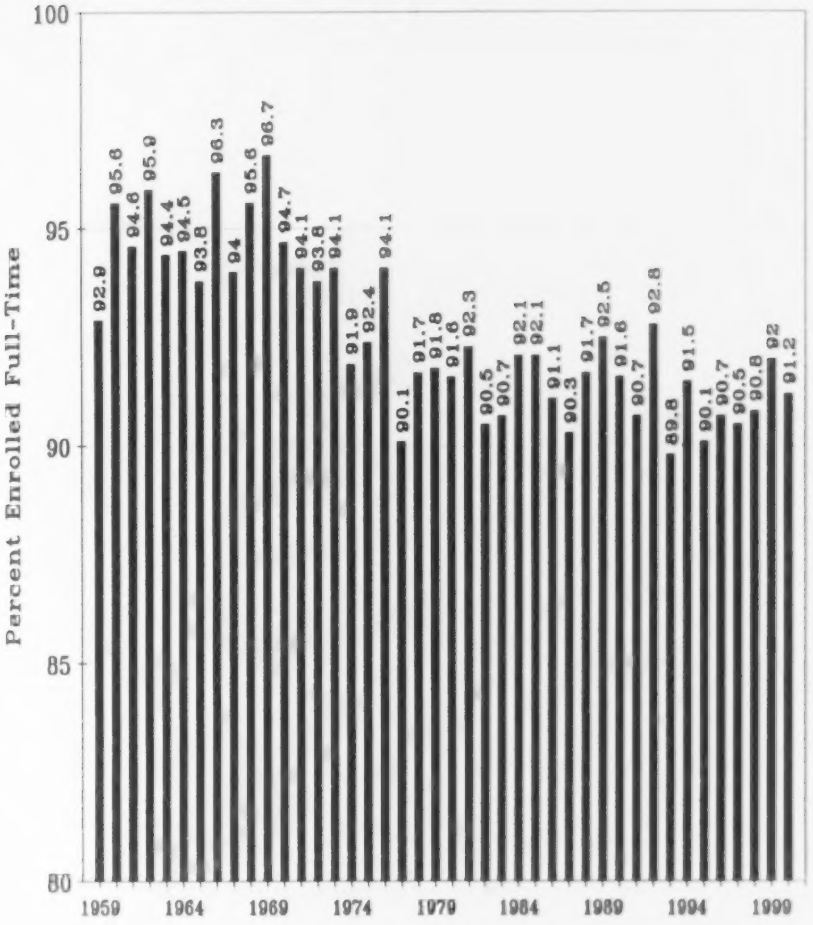
College Continuation Rates for All Students and Other Race (mainly Asian) Recent High School Graduates 1977 to 2000



Difference Between Other Race (mainly Asian) and All Students College Continuation Rates, 1977 to 2000



Full-Time Enrollment Share of College Freshmen
Who Were Recent High School Graduates
1959 to 2000



college continuation rates for the population.

Enrollment Status

High school graduates who enroll in college in the fall following high school graduation are highly likely to enroll full-time. In 2000 91.2 percent of these freshmen were enrolled full-time.

Life gets complicated quickly following high school as young adults begin assuming their mature roles. Before the complications of marriage, careers and children compete for time, young students are relatively free to pursue collegiate study full-time.

However, during the last two decades, these new college freshmen are somewhat less likely to pursue full-time study than were their peers in the 1960s and early 1970s when about 95 percent were enrolled full time. The slight decline in full-time enrollment that occurred during the 1970s will she shown to be related to increasing student employment among these freshmen that happened about this time.

Institutional Level

The Bureau of Labor Statistics has reported institutional level data on these freshmen since 1991. In October of 2000 66.2 percent of these freshmen were enrolled in four-year institutions while 33.8 percent were enrolled in two-year colleges.

Since 1991 there has been an enrollment shift toward four-year and away from two-year institutions. In 1991 the proportion of freshmen entering four-year institutions increased from 60.1 to 66.2 percent, while the share entering two-year colleges declined from 39.9 to 33.8 percent.

Summary

The data we have analyzed and reported here were collected by the Census Bureau in the Current Population Survey and reported by the Bureau of Labor Statistics. These data show that 63.3 percent of 1999-2000 high school graduates were enrolled in college by October 2000. The college continuation rates were 59.9 percent for males, 66.2 percent for females, 65.7 percent for non-Hispanic whites, 56.2 percent for blacks, 53.0 percent for Hispanics and 73.7 percent for Asians.

Over the period of available data, some groups have made significant gains in college continuation rates. These include females, non-Hispanic whites and blacks. Other groups have made little or no progress. These include males, Hispanics and Asians.

But the most disturbing trend has been the absence of growth in the college continuation rate between 1991 and 2000. The lack of growth in college access corresponds closely with a decade of badly misdirected federal, state and institutional policy making. We could have, and should have, done far better than we did.

Work or study? *Yes!*

Labor Force Participation of College Freshmen 1960 to 2000

College enrollment is always in competition with the labor market for the time and attention of young adults. By their late 20s college enrollment has lost out to the labor market and most people who want to work are working full-time.

But for a few years after high school, college captures the primary attention of most young adults. Nearly half of all beginning college freshmen that graduated from high school during the previous year were also in the labor force. That is, while they had started their college studies (more than 90 percent full-time), nearly half were also in the labor force either employed or seeking employment. Between 1960 and 2000, the proportion of these college freshmen who were in the labor force increased from 23 to 47 percent with most of this growth occurring in the 1960s and 1970s. These trends and patterns are similar for men and women, but differ substantially across racial/ethnic groups of the population.

Is working while attending college good or bad? Is student employment necessary or optional? Do students work to pay basic college attendance costs or do they work to enrich their lives while in college? The answers to these questions are all Yes!

Here we use data from the same source used in the previous analysis of college continuation rates for recent high school graduates. These data are collected by the Census Bureau in the October Current Population Survey (CPS). They are the first college enrollment data published each year from the CPS. The Bureau of Labor Statistics (BLS) reports date back to 1959 and so provide a particularly long term perspective on college

Labor Force Participation of College Freshmen
Who Were Recent High School Graduates
1960 to 2000

Source: Bureau of Labor Statistics

freshmen employment and unemployment. These data provide the first glimpse of the college continuation behaviors of recent high school graduates. They also provide the first glimpse of labor market participation of recent high school graduates entering college.

What the BLS reports, from the October 2000 CPS, is:

- 3,271,000 people left high school during the previous 12 months
- 2,756,000 of these were counted as high school graduates (including GEDs), for a high school graduation rate of 84.3 percent.
- That means 515,000 left high school without graduating
- By October 2000, 1,745,000 of the high school graduates were enrolled in college, for a college

continuation rate of 63.3 percent.

- 53.3 percent of the population of high school leavers had both graduated from high school *and* entered college by the following fall
- That leaves 1,011,000 high school graduates who were not enrolled in college the fall after high school
- 769,000 of the college freshmen were employed, or 44.1 percent of these college freshmen
- That leaves 976,000 college freshmen who were not employed
- 49,000 of these college freshmen were not employed and seeking a job, for an unemployment rate of 9.5 percent of those in the labor force

From this and previous BLS reports we can describe the larger trends and patterns in college freshman employment and unemployment. What they show is recent high school graduates first go to college, but also to employment even when they are enrolled in college.

The Data

All of the data used in this report were collected by the Census Bureau from the October Current Population Survey and then analyzed and reported by the Bureau of Labor Statistics. BLS has reported this analysis in similar formats since 1959. We are indebted to Sharon Cohany at BLS for providing access to the historical data.

The most recent of these reports for October 2000 is available from the BLS website at:

http://stats.bls.gov/news.release/hsgec.toc.htm

Additional information on high school and college student employment is later published by the Census Bureau in its P20 reports on school enrollment. The most recent data in this series is for 1999 and is available in Table 11 of the report at:

Labor Force Participation of Male College Freshmen
Who Were Recent High School Graduates
1960 to 2000

Source: Bureau of Labor Statistics

Labor Force Participation of Female College Freshmen
Who Were Recent High School Graduates
1960 to 2000

Source: Bureau of Labor Statistics

http://www.census.gov/population/www/socdemo/school.html

Note that the CPS reports data only for the civilian, non-institutional population, thus leaving out those in military service and those who are incarcerated or living in other group quarters. The CPS is based on a sample of about 50,000 households.

Note also that the current and historical BLS data used in this report have been compiled by OPPORTUNITY in an Excel spreadsheet and are available on our website at:

http://www.postsecondary.org/Spreadsheets.htm

Labor Force Participation

In October of 2000, 59.1 percent of the 1999-2000 high school graduates were in the labor force. To be in the labor force they were either employed or actively seeking employment. The labor force participation rate for those who were enrolled in college was 46.9 percent, compared to 80.3 percent of the high school graduates who were not enrolled in college. The labor force participation rate for those who dropped out of high school was 68.0 percent.

Among those enrolled in college, the labor force participation rate was 64.5 percent among those enrolled in two-year colleges compared to 37.8 percent for those in four-year colleges. For those enrolled full-time, the rate was 43.8 percent compared to 78.4 percent for those who enrolled part-time.

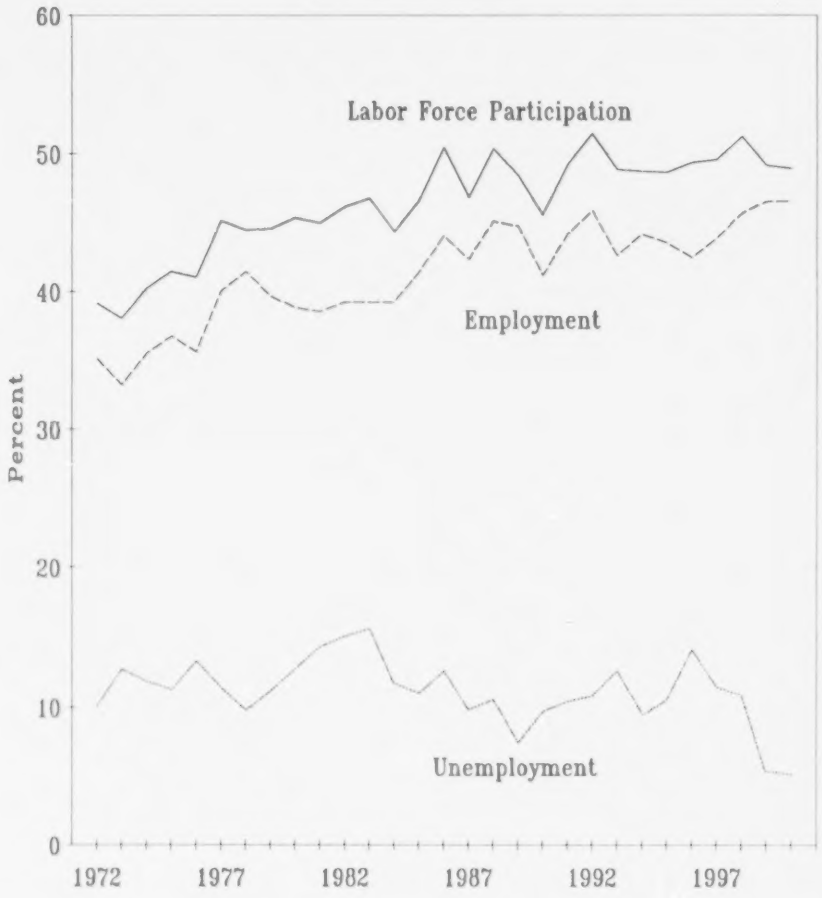
In 1959, the first year BLS reported these data, the labor force participation rate for recent high school graduates was 55.7 percent. By 1980 it had risen to a peak of 64.8 percent, then dropped back to 59.1 percent by 2000. Among college freshmen, the rate declined from 26.5 percent in 1959 to a low of 22.2 percent in 1962, then more than doubled to a peak of 50.1 percent in 1998 before falling back to 46.9 percent in 2000. Excluding the blips in the data, the labor force participation rate for college freshmen has been stable at around 47 percent since 1986.

Among high school graduates not enrolled in college, labor force participation was 80.3 percent in both 1959 and 2000. Between these years the rate has ranged from a low of 75.7 percent in 1966 to a high of 86.7 percent in 1979.

Clearly the growth in labor force participation over the last four decades has occurred only among those enrolled in college, not those high school graduates who did not attend college. Moreover, between 1969 and 1978 the increase in labor force participation among college freshmen was accompanied by a decline in the proportion of freshmen attending college full-time (see chart page 10).

Gender. The male labor force participation rate was 61.3 percent among high school graduates in October 2000, and 74.4 percent

Labor Force Participation of White College Freshmen Who Were Recent High School Graduates 1972 to 2000



Source: Bureau of Labor Statistics

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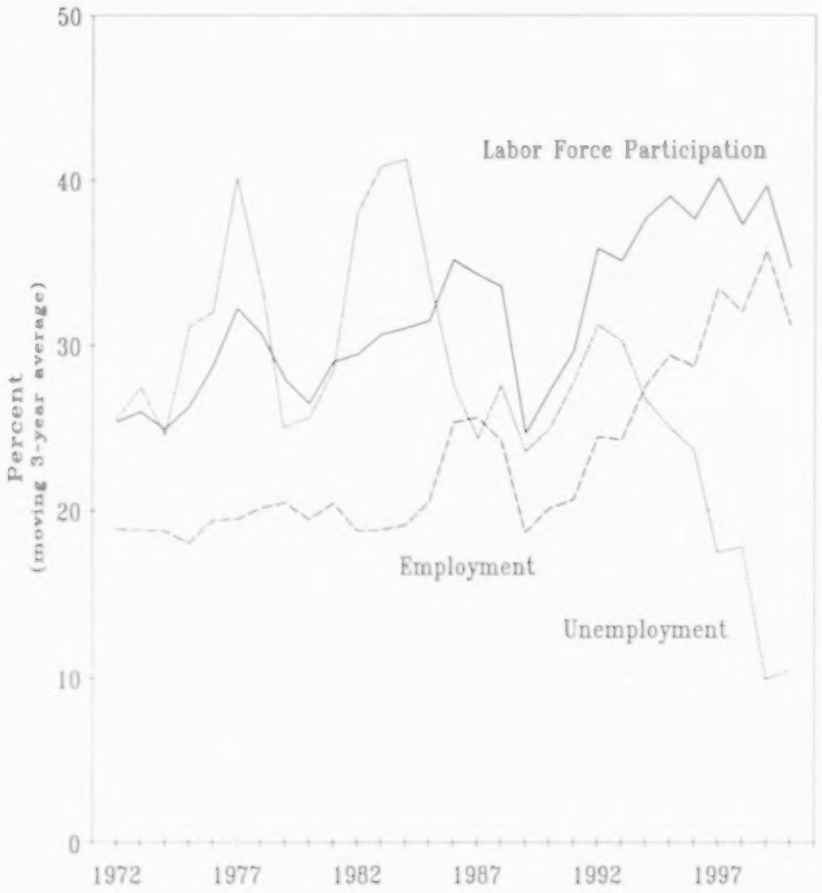
Labor Force Participation of Black College Freshmen
Who Were Recent High School Graduates
1972 to 2000



Source: Bureau of Labor Statistics

among high school dropouts. The rate was 48.7 percent among males enrolled in college and 80.1 percent among male high school graduates not enrolled in college.

Between 1959 and 2000 the labor force participation rate for males enrolled in college *increased* from 31.4 to 48.7 percent. The rate for male high school graduates not enrolled in college *decreased* from 91.8 to 80.1 percent during the same period. In data reported since 1974, the male labor force participation rate of high school dropouts *declined* from 82.3 to 74.4 percent by 2000.

For females the October 2000 labor force participation rate was 57.3 percent for high school graduates and 59.5 percent for high school dropouts. For high school graduates enrolled in college, the rate was 45.5 percent compared to 80.4 percent for those high school graduates not enrolled in college.

Between 1959 and 2000 the labor force participation rate for females enrolled in college increased from 20.7 to 45.5 percent. The participation rate for female high school graduates not enrolled in college also increased from 73.0 to 80.4 percent. The rate for female high school dropouts also increased from 48.6 percent in 1974 to 59.5 percent by 2000.

For our purposes here, these data mainly show very large increases in labor force participation rates among both male and female college freshmen over the last four decades. For males the increase was 17.3 percentage points, and this occurred mainly between 1963 and 1983. For females the increase was 24.8 percentage points, and this occurred mainly between 1964 and 1977.

While there is now little difference between male and female college freshmen in their engagement with the labor force, the same cannot be said when comparing the major racial/ethnic groups. Among college freshmen, Hispanics are most likely to be participating in the labor force, and blacks are least likely.

Whites. The labor force participation rate for white high school graduates in October 2000 was 61.5 percent. For white high school dropouts the participation rate was 73.0 percent. Among college freshmen the rate was 48.9 percent, while it was 83.9 percent for those high school graduates who were not enrolled in college.

Between 1972 and 2000, the white labor force participation rate for college freshmen increased from 39.1 to 48.9 percent. For white high school graduates who did not enroll in college the labor force participation rate stood at 83.1 percent in 1972, and was 83.9 percent by 2000. Clearly nearly all of the gain in labor force participation occurred among college freshmen.

Among the white college freshmen, 46.5 percent were employed. The

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rate for 1999 and 2000 was the largest proportion of freshmen with jobs on record, and was well above the 1972 rate of 35.1 percent. The unemployment rate was 5.1 percent, which was a record low and was down sharply from the 10 to 12 percent range between 1972 and 1998. Nearly all the white college freshmen that wanted jobs in October of 2000 found them.

Blacks. In October 2000 the labor force participation rate for black high school graduates was 47.7 percent. For high school dropouts it was 51.9 percent. Among the high school graduates, the rate was 36.8 percent among those who entered college compared to 61.5 percent among those who were not enrolled in college.

Between 1972 and 2000, the labor force participation rate among black high school graduates enrolled in college *increased* from 27.9 to 36.8 percent. For high school graduates not enrolled in college the rate *decreased* from 76.4 to 61.5 percent. The graph on page 14 shows these historical data plotted as a moving three-year average to highlight important trends and obscure statistical noise.

For black college freshmen in October 2000, 34.4 percent were employed--the second highest proportion on record. The unemployment rate was 7.0 percent--the lowest on record. Clearly the last few years have been favorable to young blacks seeking jobs while attending college.

Hispanics. In October 2000 the labor force participation rate for Hispanic high school graduates was 69.2 percent, and for dropouts was 61.1 percent. Among the high school graduates, the rate was 63.3 percent for those enrolled in college and 75.8 percent for those who did not enroll in college immediately after high school.

Labor Force Participation of Hispanic College Freshmen
Who Were Recent High School Graduates
1976 to 2000

Source: Bureau of Labor Statistics

Since 1976 when these data were first published, the labor force participation among high school graduates that entered college has been up, and has gone down for high school graduates who did not enter college. Among Hispanic college freshmen, the rate has gone from 55.0 to 63.3 percent. Among those who did not go on to college, the rate has gone from 79.2 to 75.8 percent.

Summary

The data examined here have been reported by the Bureau of Labor Statistics on the college attendance and employment of recent high school leavers. Our main interest here is in the trends and patterns of employment among college freshmen who graduated from high school during the previous 12 months.

These data show a very substantial growth--more than doubling--in labor force participation rates among college freshmen over the last 40 years.

Most of these students have jobs. And by 1999 and 2000, the unemployment rate among freshmen in the labor force

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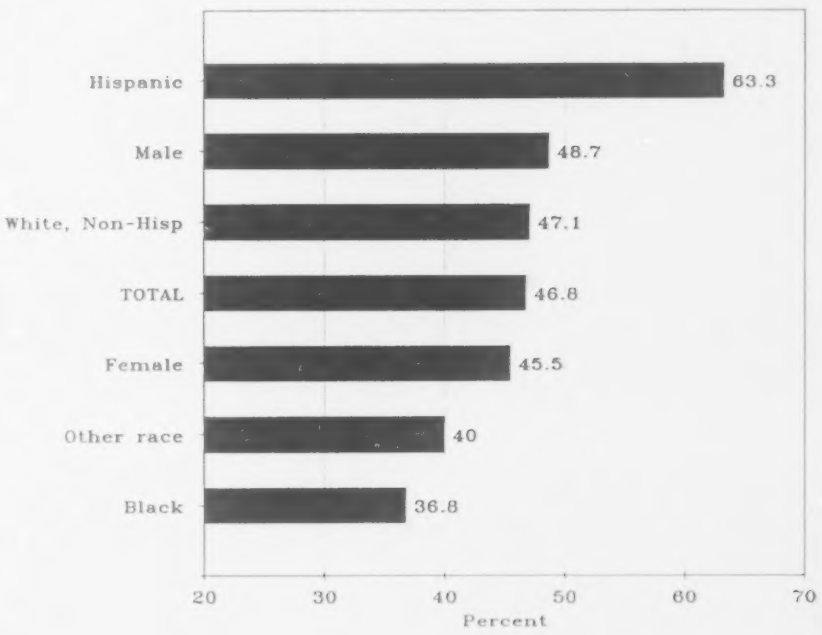
was the lowest it had ever been, and by a wide margin. Thus, nearly all freshmen who wanted jobs were in fact employed by October 2000.

In October 2000 61.0 percent of the freshmen in two-year colleges had jobs, compared to 35.4 percent of those in four-year institutions. Similarly, 40.8 percent of full-time students had jobs, compared to 77.6 percent of part-time students.

There are very large differences across racial/ethnic groups of the population. By wide margins, Hispanic freshmen are the most likely to be in the labor force and working. Black freshmen are the least likely to be in the labor force and working.

These data show a broad-based growth in freshman employment over the last four decades. We should be asking what this means for their educations.

Labor Force Participation by Gender and Race/Ethnicity
2000



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Number 108 www.postsecondary.org June 2001

The door to life . . . *. . . is closing early*

High School Graduation Trends and Patterns
1981 to 2000

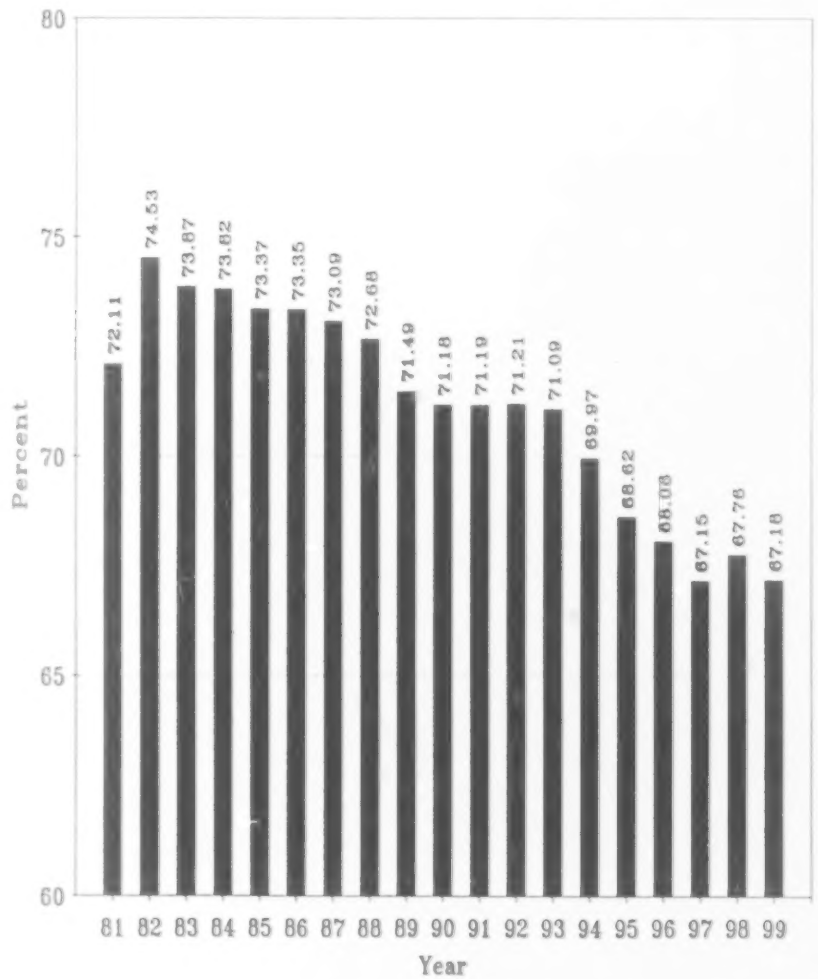
A college education is more important than it has ever been to individual, family, community, state and national welfare. But before a student can enroll in college, he or she needs to first graduate from high school.

Unfortunately, a declining share of students that begin the ninth grade of public high school are graduating with regular high school diplomas four years later. The first hurdle on the path to a college degree is becoming an insurmountable barrier to postsecondary education opportunity for a growing share of American youth.

In an effort to try to improve student performance on standardized tests, states are trying to manage their K-12 education systems under industrial production models. Set high production expectations. Speed up the production line. Expect workers to produce more, usually without increasing investments in the production process. In industrial models this is called productivity, and economists worship improvements in productivity.

Almost no one in the education system believes that the industrial production model can be applied to the education of children. But we are Americans who worship economic growth, and what works in industrial production must have some relevance to improving educational performance. And so we try.

Public High School Regular Graduation Rate
1981 to 1999



And as getting over the high school graduation hurdle on the path to college is becoming more difficult, and fewer are making it by the traditional path, more students are taking alternative paths. A growing share of students are dropping out of high school and taking the GED test.

A list of alternative paths to high school completion has emerged, many of which are sanctioned by colleges, financial aid eligibility rules and employers.

When we started this analysis, we thought that high school graduation was a clear-cut status: Either you were or you were not a high school graduate. However, we are now somewhat less sure that we know what a high school graduate is. When students in adjacent states, and even adjacent school districts, could be a graduate from one and not the other, the definition of high school graduation is certainly variable from one part of the country to another.

Moreover, an emerging term of "high school completion" is being used in ways that greatly obscure the difficulty that a growing share of high school students have encountered as they are unable to complete high school graduation standards--either coursework or high stakes tests.

More importantly we are concerned here about high school graduation status for all at-risk populations in higher education: low income, males, Hispanics, etc. As states apply the industrial production model to high school education, those most in need of help are least likely to get it. And so the policy processes underway in state and federal decisions may in fact be serving to further divide us educationally, economically and socially than we are already.

Here we review data on high school graduation in the United States. We want to know what it means, and for whom, across the states and school districts of the United States. We want to know how it is changing.

The Data

Data used in this analysis are collected from many sources, with varying definitions and meanings.

First, we use data to measure *regular* high school graduation. This has been collected since 1981 by the National Center for Education Statistics through the Common Core data collection from state education agencies. In particular we use fall ninth grade enrollment and *regular* high school graduates by state.

Second, we use data from the Census Bureau's Current Population Survey to measure high school graduation status for populations at different ages. Census includes GED and other high school equivalency certifications in its reported high school graduates.

Third, we have used information on state high school graduation standards collected by the Education Commission of the States and compiled and reported in the *2000 Digest of Education Statistics* by the National Center for Education Statistics.

We supplement these data with information from other sources. We have used the *GED 1999 Statistical Report* for information of GEDs by state produced by the American Council on Education. We have used part of a Department of Defense study on persistence in military service by forms of high school completion for inductees. And we have used other sources as noted in the text for essential definitions and data.

Defining High School Graduation

Regular high school diploma. The basic definition of a high school graduate is one who has completed a prescribed set of coursework in high school. This coursework is determined by states or school districts. It consists of a certain number of Carnegie units or years of study in different curriculum areas. This leads to the awarding of a high

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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school diploma.

In 1983, the National Commission on Excellence in Education issued its dark assessment of the high school curriculum in *A Nation at Risk*. The Commission recommended the Five New Basics high school curriculum for all students consisting of:

- 4 years of English
- 3 years of mathematics
- 3 years of science
- 3 years of social studies
- 1/2 year of computer science

In addition, for those preparing for college, the Commission recommended 2 years of a foreign language.

A 1998 tabulation of state requirements for high school graduation by the Education Commission of the States found the following:

- Total Carnegie units required for graduation ranged from 13 to 24, with most states requiring 20 to 22 for graduation.
- English/language arts: Most states require 4 years, although a few require 3.
- Social studies: Most states require 3 Carnegie units, with a range of 2 to 4.
- Mathematics: States are about evenly split between 2 and 3 years of math in high school. Several states appear to be adding math Carnegie units to graduation requirements.
- Science: Most states require 2 years of science, although several require 3. Several states appear to be adding science Carnegie units to graduation requirements.
- Physical education: Most states require 1 to 2 years of physical education.
- Electives: Most states require additional elective coursework to complete the prescribed total of Carnegie units.

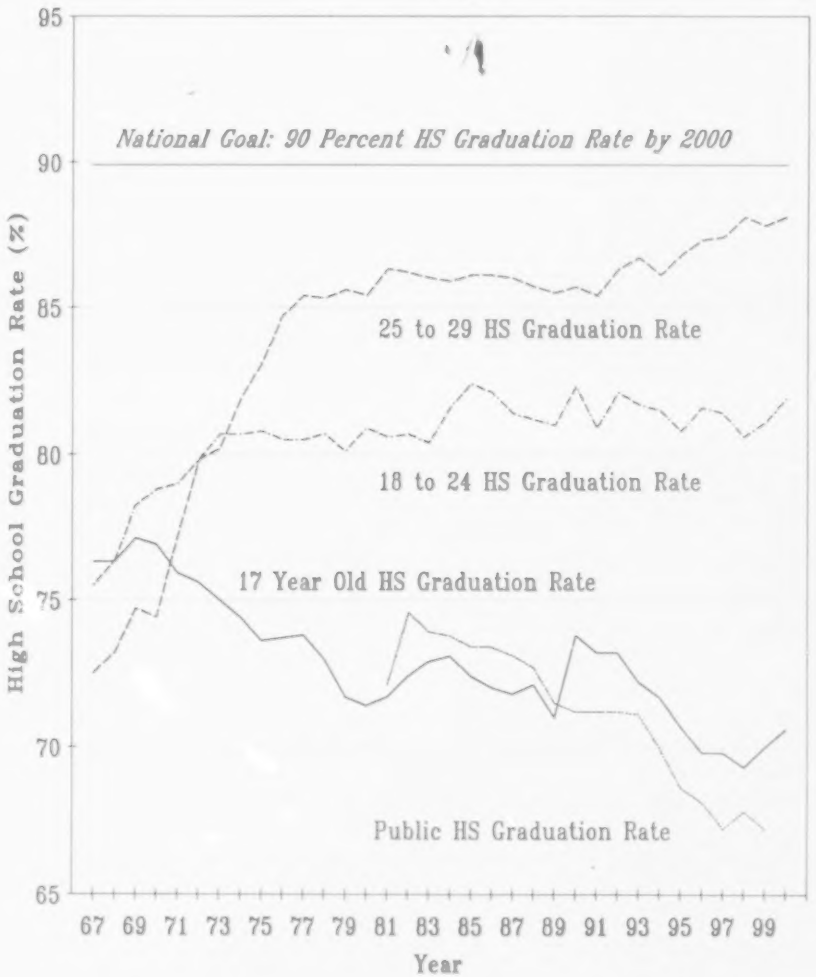
States appeared to be moving their high school graduation requirements toward those recommended by the National Commission on Excellence in Education in 1983 as additional requirements in several states were being implemented at the time of the survey. In addition states use tests to determine high school graduation.

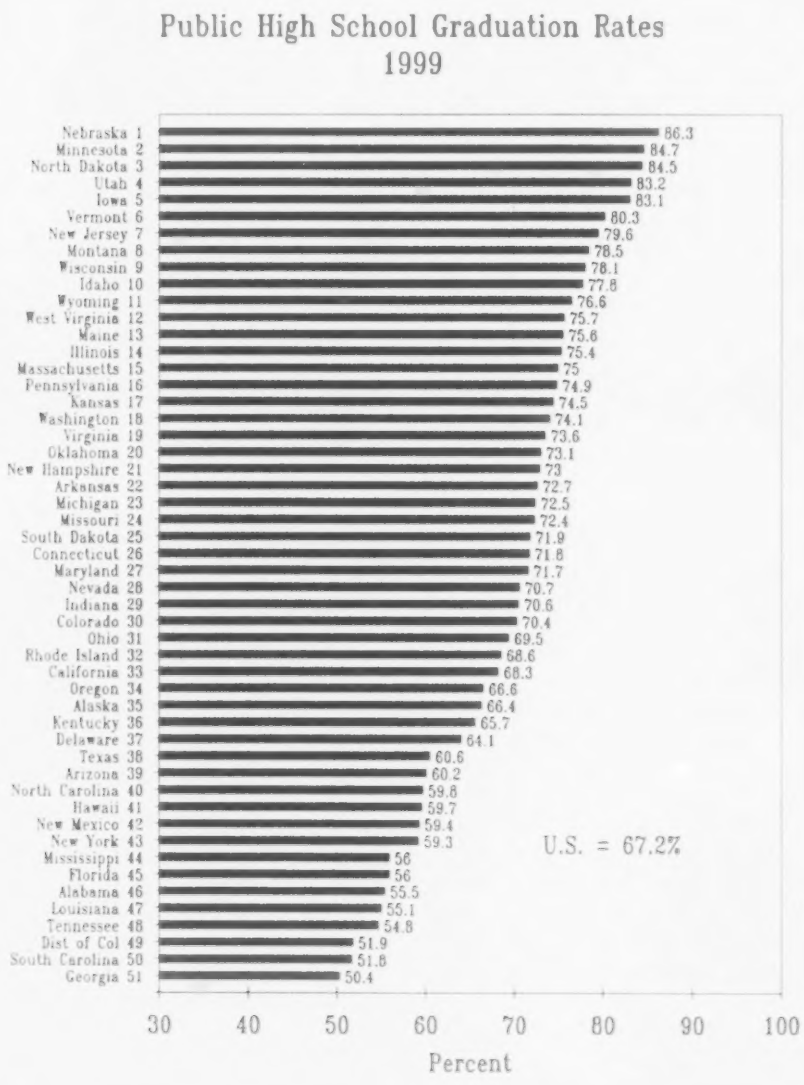
Premium high school diplomas. At least eight states have a variety of high school diplomas with different graduation requirements for each. The usual distinction is between a standard diploma and a college preparatory diploma, which usually has its own label. The premium diploma may have extra curricular requirements for endorsement, such as more math or foreign language requirements.

Examples of these premium diplomas include:

Arkansas	college preparatory
Georgia	college preparatory
Hawaii	recognition diploma
Louisiana	regents program
New York	regents diploma
Rhode Island	college preparatory
Tennessee	university preparatory
Vermont	advanced studies

Various High School Graduation Rates
1967 to 2000


National Goal: 90 Percent HS Graduation Rate by 2000
25 to 29 HS Graduation Rate
18 to 24 HS Graduation Rate
17 Year Old HS Graduation Rate
Public HS Graduation Rate
High School Graduation Rate (%)
95
90
85
80
75
70
65
67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99
Year



General Education Development (GED). The GED tests are a battery of examinations that measure the general academic skills and knowledge usually acquired in a four-year high school program of study. Passing scores on the tests are set so that examinees must perform as well or better than 66 percent of the norm group of graduating high school seniors. In 1999 723,303 persons in the United States completed the GED test battery, 506,155 met the score requirements, and 515,585 credentials were issued.

The Census Bureau considers the GED to be equivalent to a regular high school diploma, and this is apparent in Census reporting of data. As the chart on the previous page shows, the proportion of 17 year olds who are high school graduates has declined since the late 1960s. However, the proportion of 18 to 24 year olds who report that they are high school graduates is not only much higher, but has risen since the late 1960s. At ages 25 to 29 the proportion of the population reporting that they are high school graduates rises further, and this too has risen significantly since the late 1960s.

The growth in the proportion of high school graduates as reported by the Census Bureau appears to be largely attributable to the growth in GED credentials issues. In 1968 about 184,000 GEDs were issues. In 1999 the total was nearly 527,000. Over this period of time the average age of those receiving GED credentials has dropped from 29.5 years to 24.6 years. The proportion planning further study increased from 39.9 to 65.0 percent.

Other high school completion. Besides high school graduation and taking the GED tests, students complete high school in other ways. We list some of them here:

- High school completion. Students who do not complete their high school course work to meet their graduation requirements but are still enrolled through the end of 12th grade receive certificates of completion. These may include students in special education, immigrant children and others. We estimate that about 9 percent of fall term high school seniors do not receive regular high school diplomas, and this share of seniors is rising.
- External diploma program. This is a program for adults that assesses mastery of 65 competencies in 8 general areas through the completion of tasks. There is no direct instruction, nor are their tests in the traditional sense. Adults accepted into the program meet weekly with an assessor. When the 65 competencies are mastered, a high school diploma is awarded. This program is available in 14 states plus the District of Columbia. It is administered by the American Council on Education along with its GED program.
- Distance study diploma programs.

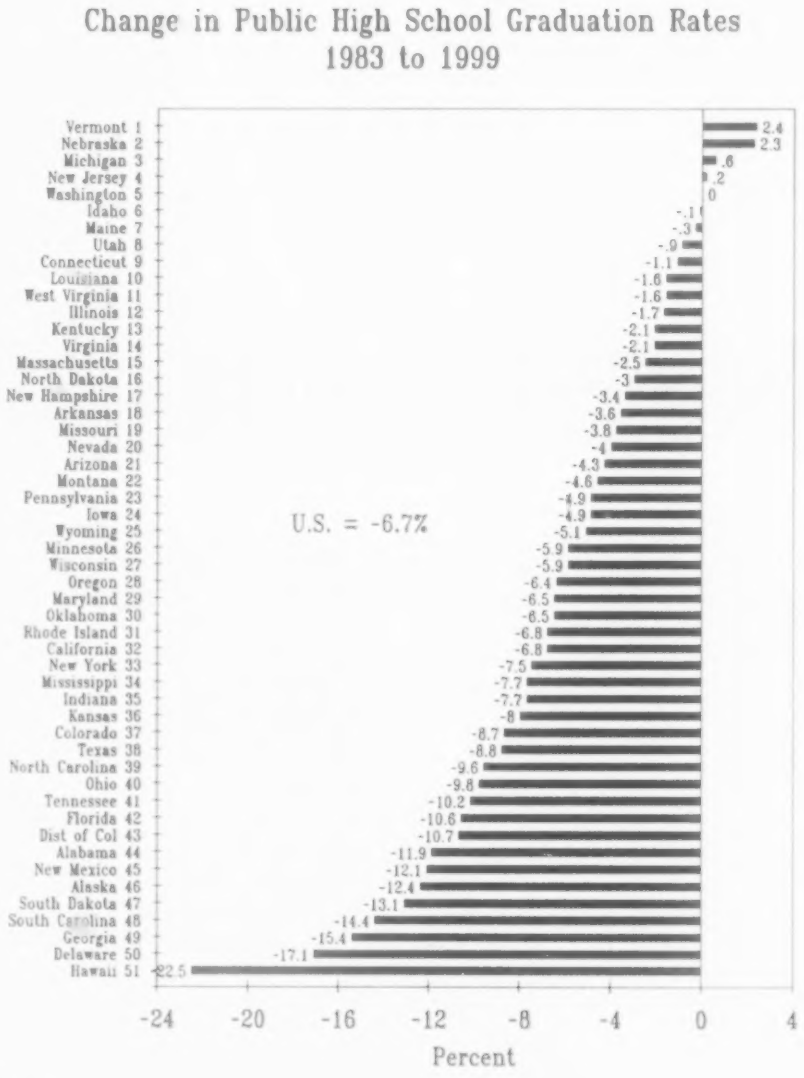
The Distance Education and Training Council accredits schools that provide high school education by correspondence and other methods. A list of these schools is provided on their website at: http://www.detc.org

- Other forms of secondary education include home schooling, adult basic education, occupational certification and other testing programs sometimes operated by states.

Public High School Graduation

In the 1998-99 school year, public high schools awarded 2,488,605 regular high school diplomas. Four years earlier, in the fall of 1995 when these students began the ninth grade, the count was 3,704,455. Thus, 67.2 percent of those who began the ninth grade received regular high school diplomas by the end of their senior year. 1,215,850 did not.

This is how we calculate the high school graduation for all 50 states plus the District of Columbia, for each year from 1981 through 1999. This method employs data collected by state education agencies and reported to the National Center for Education Statistics on the Common Core report. These data are published by NCES in many places, but are always available eventually through the annual *Digest of Education Statistics*.



Trends. Calculated in this way, the public high school graduation rate has been declining since 1982. Between 1982 and 1999 the graduation rate declined from 74.5 to 67.2 percent, or by 7.3 percentage points. The decline was more gradual between 1982 and 1993, then dropped sharply between 1993 and 1999.

Expressed another way, if the 1999 public high school graduation rate had equaled the rate in 1982, there would have been 272,277 more public high school graduates in 1999 than there actually were.

Patterns. In 1999 the public high school graduation rate ranged from 86.3 percent in Nebraska to 50.4 percent in Georgia.

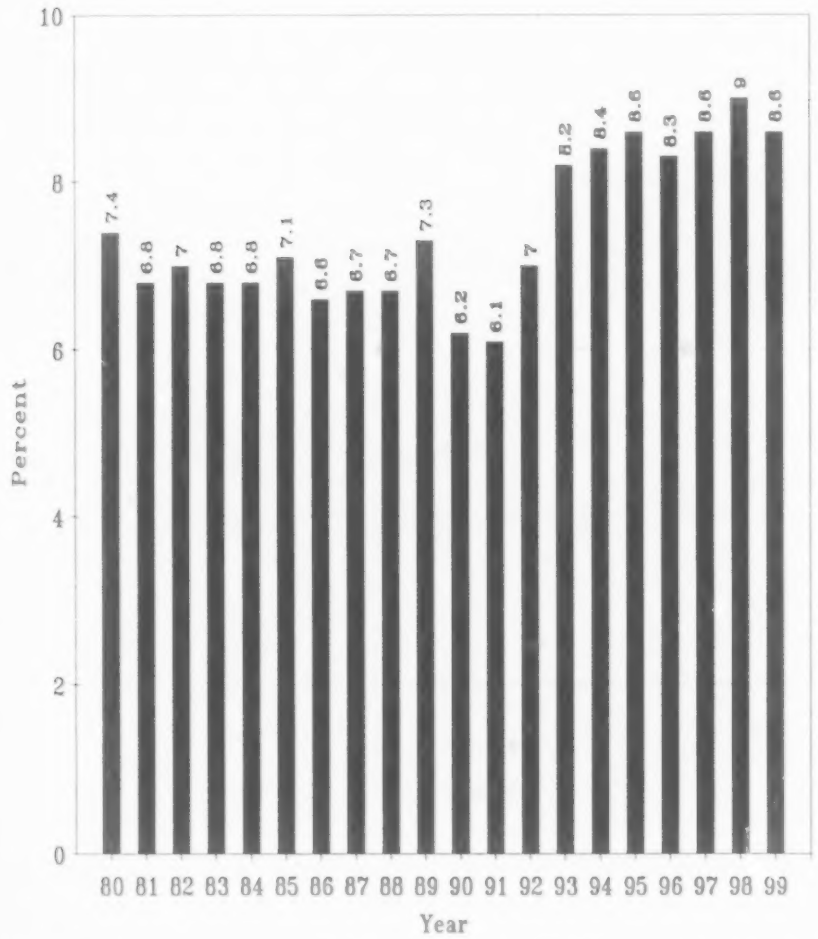
The remaining top ten states with the highest public high school graduation rates in 1999, besides Nebraska, were:

Minnesota	84.7%
North Dakota	84.5%
Utah	83.2%
Iowa	83.1%
Vermont	80.3%
New Jersey	79.6%
Montana	78.5%
Wisconsin	78.1%
Idaho	77.8%

The remaining bottom ten states with the lowest public high school graduation rates in 1999 were:

South Carolina	51.8%
District of Columbia	51.9%
Tennessee	54.9%
Louisiana	55.1%
Alabama	55.5%
Florida	56.0%
Mississippi	56.0%

Proportion of Fall Seniors in Public High Schools
Not Receiving Regular High Diplomas
1980 to 1999



New York	59.3%
New Mexico	59.4%

Between 1982 and 1999, while the public high school graduation rate was declining nationally, this rate actually increased in four states. These four states, and their increases between 1982 and 1999, were:

Vermont	+2.4%
Nebraska	+2.3%
Michigan	+0.6%
New Jersey	+0.2%

Probably most disturbing are the declines in all of the remaining states (except **Washington**, where no change occurred). At the extreme was **Hawaii** where the public high school graduation rate declined by 22.5 percentage points. In 1982 Hawaii's public high school graduation rate was 82.2 percent and ranked fourth among the states. By 1999 Hawaii's rate had dropped to 59.7 percent and Hawaii ranked forty first among the states.

Other states where the public high school graduation rate dropped by more than 10 percentage points between 1982 and 1999 were:

Delaware	-17.1% (30th to 37th)
Georgia	-15.4% (~46th to 51st)
So Carolina	-14.4% (46th to 50th)
South Dakota	-13.1% (5th to 25th)
Alaska	-12.4% (37th to 35th)
New Mexico	-12.1% (35th to 42nd)
Alabama	-11.9% (43rd to 46th)
Dist of Col	-10.7% (49th to 49th)
Florida	-10.6% (47th to 45th)
Tennessee	-10.2% (40th to 48th)

Notably, all but South Dakota ranked relatively low in 1982, and they also generally sank the most between 1982 and 1999.

Note that all of the data used in these calculations for each state and year have been compiled into a single Excel workbook available on our website at:
http://www.postsecondary.org
Look under the Spreadsheets button.

Seniors Who Do Not Graduate

In the fall of 1998 there were 2,723,707 students who started the senior year of public high school. But for the 1998-99 school year only 2,488,605 regular high school diplomas were awarded by public high schools in the U.S. 235,102 students that made it to the senior year of high school did not make it to regular high school graduation. This was 8.6 percent of those that started their senior year.

Reports filed by state education agencies with the National Center for Education Statistics provide some information on what happened to these students. Of the total of 235,102 that did not receive regular high school diplomas, 134,427 persons ages 19 or younger received high school equivalency certification through the GED program. An additional 38,132 were simply identified as "other high school completers" during the 1998-99 school year, and may have received certificates of completion instead of diplomas. Some of these may have been special education students whose disabilities prevented them from

completing course work required to receive regular diplomas.

In **Arizona**, 22 percent of those who started the senior year of high school failed to receive a regular high school diploma. 45,813 seniors were enrolled in the fall of 1998, but only 35,728 regular high school diplomas were awarded to these seniors. 10,085 did not receive regular high school diplomas, and only 357 of these completed high school in some other form.

In six additional states, more than 15 percent of those that began their senior year of high school did not receive regular high school diplomas in 1998-99. These states were:

Oregon	19.5%
Alaska	19.0%
Alabama	17.5%
Tennessee	17.4%
Nevada	17.4%
Georgia	16.7%

(In one jurisdiction, the **District of Columbia**, more students received regular high school diplomas--2,675--than began the year as seniors--2,572.)

GED Credentialing

The GED is by far the most frequently used alternative to the regular high school diploma. In 1998 there were 498,015 GED credentials issued in the 50 states plus the District of Columbia.

Among the states 16.7 percent of the total of diplomas and GEDs were awarded as GEDs. Of course the proportions varied across the states. The state with the highest proportion of high school credentials awarded as GEDs was **Arizona** at 25.8 percent. Note also that Arizona also had the highest proportion of fall term seniors not receiving regular high school diplomas at 22.0 percent. Apparently in Arizona nearly a quarter of those completing high school choose the GED instead of a regular high school diploma.

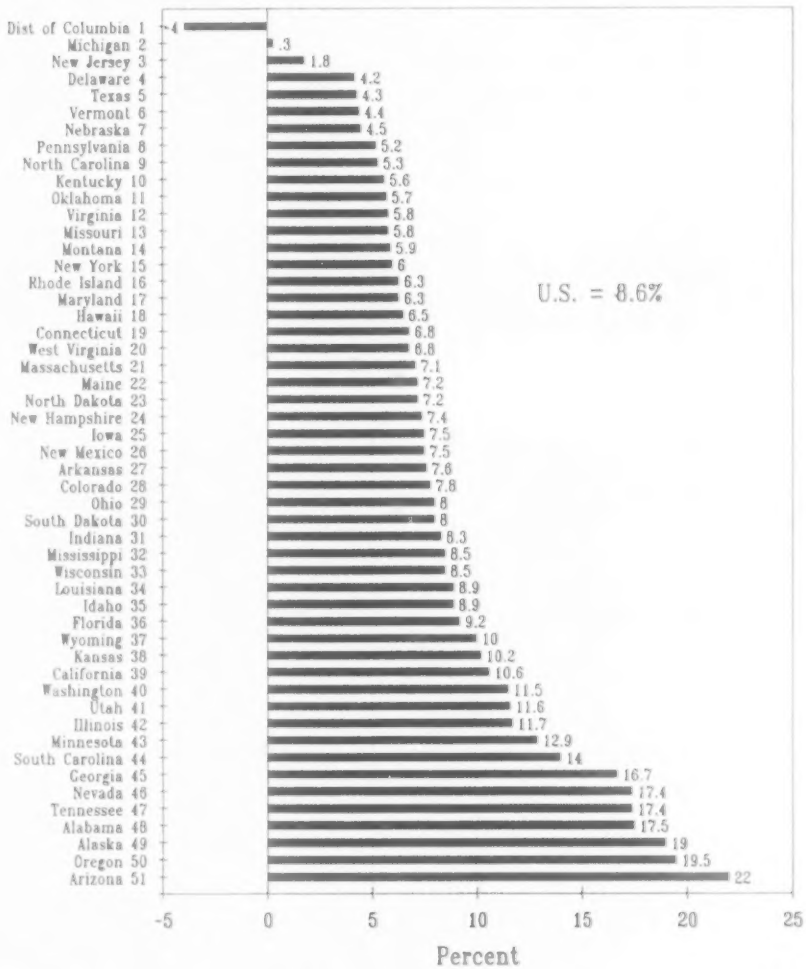
Many other states closely followed Arizona with nearly a quarter of their high school graduation or equivalent certification occurring through the GED program. The states with 24 percent or more of their awards going through the GED program in 1999 were:

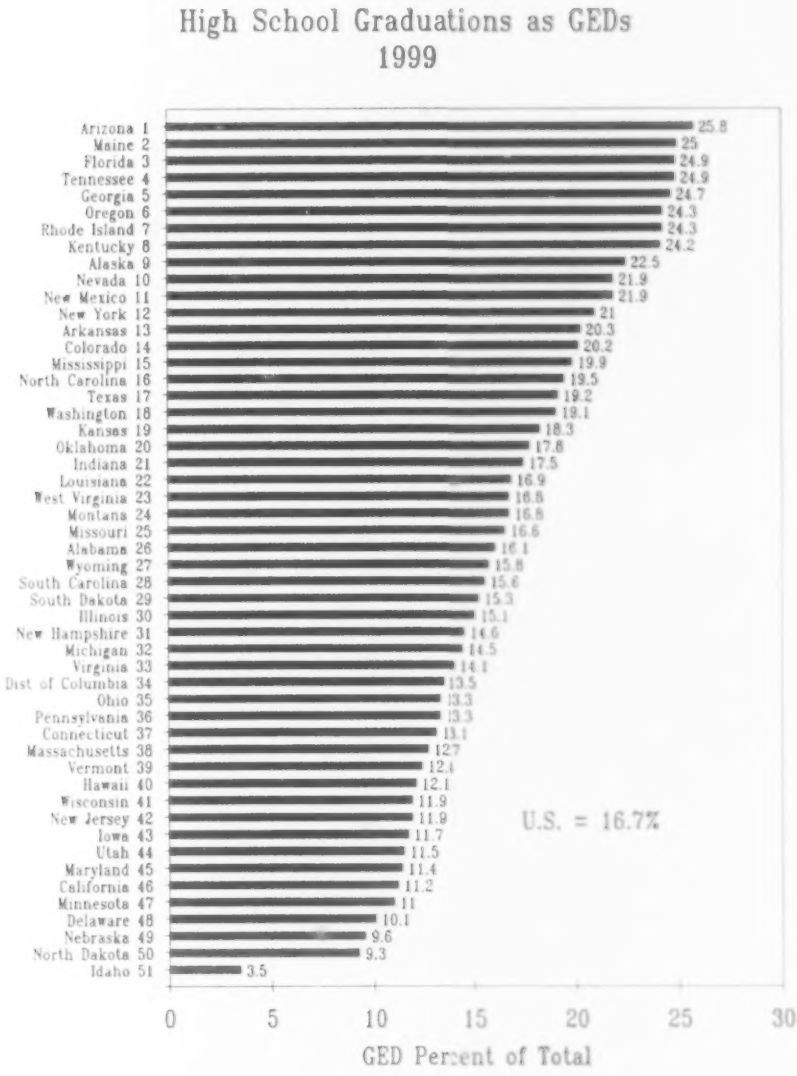
Maine	25.0%
Florida	24.9%
Tennessee	24.9%
Georgia	24.7%
Oregon	24.3%
Rhode Island	24.3%
Kentucky	24.2%

The Arizona pattern holds in other states as well. States with low public high school graduation rates and high proportions of GED awards include **Georgia, Tennessee, Florida, New York, New Mexico, Mississippi, North Carolina, Texas, Kentucky, Alaska, Oregon** and others. It appears that students in these states are likely to eventually appreciate the importance of high school completion.

Unfortunately, some states have both

Fall Seniors Not Receiving Regular High School Diplomas by State, 1999





low public high school graduation rates and low proportions of GEDS. These states include **South Carolina, District of Columbia, Louisiana, Alabama, Hawaii, Delaware, California** and other states. In these states students are having serious trouble completing regular high school graduating requirements and are not pursuing the GED alternative. These states face an especially serious problem preparing young people for a world of work dependent on more than high school education for productivity, decent pay and high living standards.

At the other end of the scale, just 3.5 percent of the high school graduation credentials were awarded through the GED program in **Idaho**. Since Idaho ranks high among the states with its regular high school graduation rate, people who want the diploma appear to be relatively successful in earning it though high school.

Conclusions

As we observed in our first examination of these data in the September 1999 issue of OPPORTUNITY, the United States appears to have developed a four-tiered system of high school completion:

- *Tier 1:* Premium high school diplomas reflecting successful completion of college preparatory coursework of some other measure of superior performance.
- *Tier 2:* Regular high school diplomas based on state or local standards for completing Carnegie units in specified subject areas. In many states these standards are being increased.
- *Tier 3:* Alternative certification, usually the GED, but sometimes involving diplomas by distance education (correspondence), other assessments, etc.
- *Tier 4:* Certificates of completion, performance, or similar designation, for those who complete their 12th year but do not meet graduation requirements.

Our studies of income and earnings at different levels of educational attainment make clear that a high school education is not as valuable as it was thirty years ago. Nevertheless, high school education remains the foundation for the additional education that is now required to prepare people for the highest paid jobs available in the job market. High school education is a necessary but insufficient condition for success in life.

Ultimately we are most concerned that this tiering of high school education and completion establishes tracks toward different sets of opportunities later in life. Long before a young person can appreciate the consequences of the decisions he/she makes--or are made for him/her--educational decisions are made. These decisions lead to different educational outcomes that directly determine the welfare of individuals, families, communities, states and the nation as a whole.

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State Student Financial Aid Efforts 1982 to 2000

In 1999-2000, states provided nearly $4.2 billion in financial aid to college students. About 77 percent of the total was need-based grant assistance targeted on undergraduate students. Another 21 percent was non-need-based aid awarded to undergraduates. The remaining 2 percent was financial aid for graduate students.

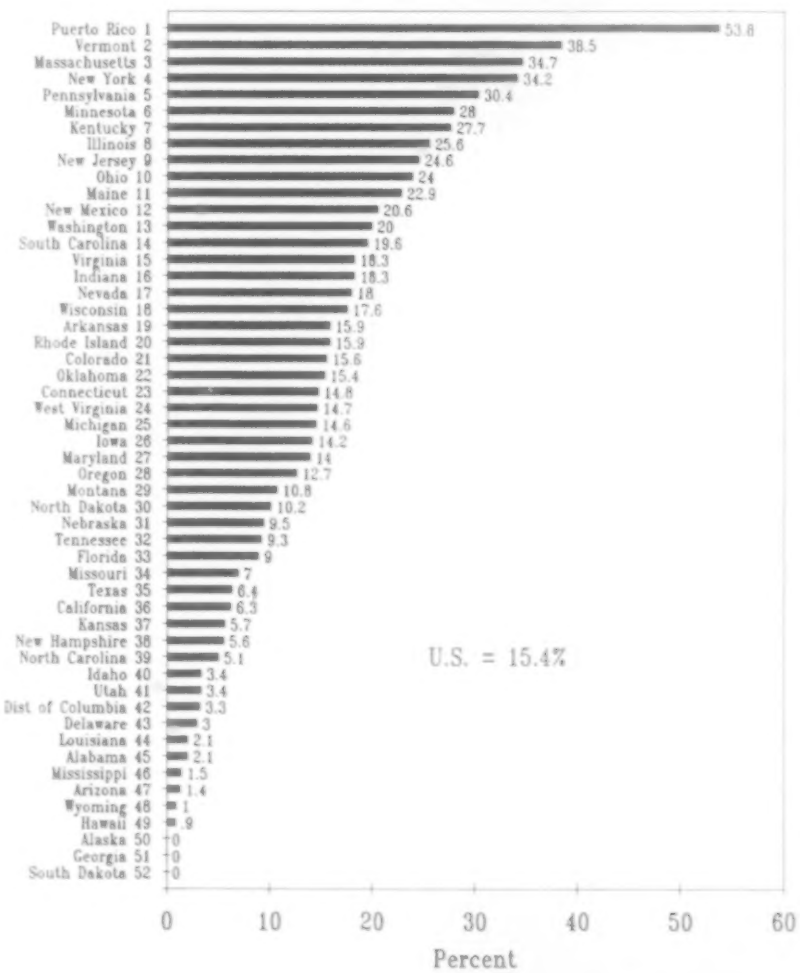
States provided $3.2 billion in need-based grant assistance to 1.9 million undergraduate students or about 15 percent of their undergraduate students in 1999-2000. By contrast the federal Pell Grant program provided $7.1 billion in need-based grant assistance to 3.7 million students or about 30 percent of undergraduate students.

States vary enormously in their programmatic and financial efforts to assist their own undergraduate students to pay college attendance costs.

- Many states have in the past focused on low tuition in their public institutions. But all states began turning away from low tuition policies about 1980 and began shifting a growing share of the costs of education to students and their families through substantial real tuition increases. This trend has received periodic boosts as difficult state budget situations and state preferences for increased funding on prisons and Medicaid have led to steady cost-shifts from taxpayers to students over the last two decades. Tuition, however, still provides only about a third of the resources used to educate students in public institutions.
- States now put as much as 20 percent of their state higher education funds into financial aid targeted on students rather than institutions, and as little as zero. The states that have pursued the financial aid strategy targeted on students typically have substantial private college sectors that lobby aggressively and effectively for aid targeted on students rather than institutions. In this form aided students can bring state resources to private institutions without the public oversight that public institutions are subject to.
- The 1990s have seen the rapid growth in state merit scholarship programs not awarded on the traditional basis of financial need, but rather on the academic bases of high school grades or class rank, high school or college test scores, or similar non-financial criteria.

There are few areas of higher education where states vary as much as they do when it comes to providing financial aid to students to help them pay college attendance costs.

Proportion of Undergraduates Receiving State Grants
1999-2000



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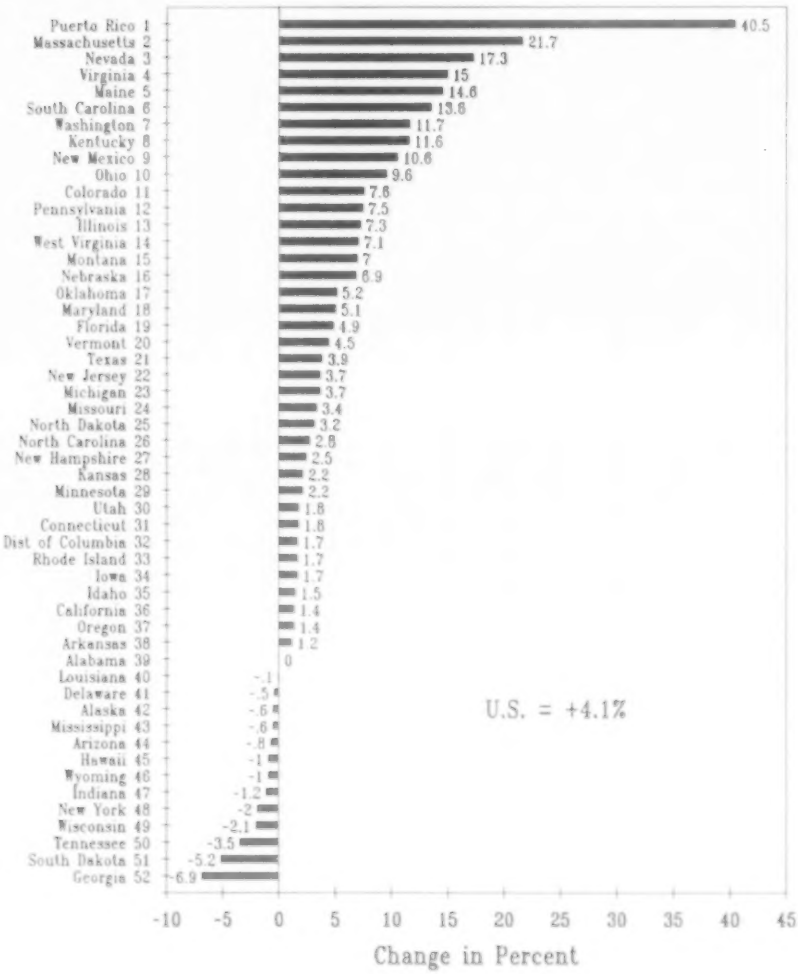
Change in Undergraduates Receiving State Grants 1989-90 to 1999-2000



In contrast to the variety of state financial aid efforts, the federal efforts in financial aid to assist students appear to be stable, almost unchanging from year to year, even boring. But unlike state programs, federal student financial aid efforts have solid bases in academic studies and policy research. Unlike the states, the federal student financial aid programs are more often targeted on known problems and produce predictable outcomes.

In the dynamic state laboratories of natural experiment and testing, variation and change is the norm:

- The number of states offering need-based grant programs for undergraduates dropped by three during the last decade as **Alaska, Georgia** and **South Dakota** eliminated their need-based grant programs altogether.
- The states with large non-need based financial aid programs--usually merit scholarship programs--are nearly all southern states. Eight states provided about 83 percent of the non-need based undergraduate scholarship dollars in 1999-2000: **Georgia, Florida, Ohio, Louisiana, North Carolina, South Carolina, Virginia** and **Mississippi**.
- States have been quick to establish college savings programs and pre-paid tuition programs. Now nearly all have them.

Here we explore data collected from state student financial aid agencies in the annual survey of the National Association of State Student Grant and Aid Programs. We supplement these data with information from the U.S. Department of Education, National Center for Education Statistics and other sources to see what the states are doing, if anything, to provide financial assistance to their own students. The story told by these data is one of variety, ranging from serious commitment to complete abdication of state responsibility.

The Data

Each year for the last 31 years the National Association of State Student Grant and Aid Programs conducts a survey of state student financial aid agencies. The survey collects a wide variety of data on dollars awarded, students assisted, issues being addressed, and other information on student financial aid programs operated by the states. The most recent report was prepared by Kristen DeSalvatore of the New York State Higher Education Services Corporation.

DeSalvatore, K., and Hughes, L. (April 2001.) *31st Annual Survey Report, 1999-2000 Academic Year, State-Funded Scholarship/Grant Programs for Students to Attend Postsecondary Education Institutions.* Albany: New York State Higher Education Services Corporation.

Copies of the report are available for $20 at: HESC, 99 Washington Ave.,

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Room 1320, Albany, NY 12255. Attention: NASSGAP.

In addition and for reference purposes, our analyses employ data from additional sources. Most important is data on Pell Grant dollars and awards by state reported by the U.S. Department of Education. These data provide a comparable measure of needy students from low and moderate family income backgrounds enrolled in higher education in each state. We obtained our pre-release data for 1999-2000 from Steve Carter at the Department of Education.

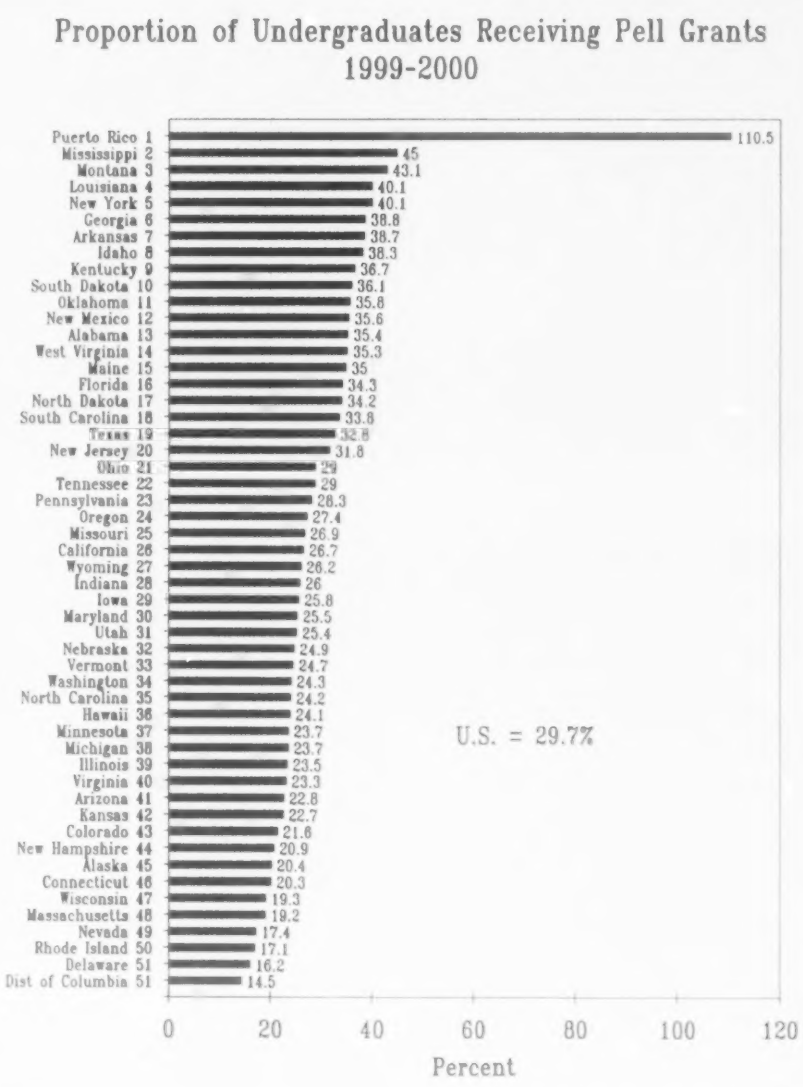
Undergraduate enrollment data by state are also used for reference purposes in this analysis. Fall 1999 data on undergraduate enrollment by state were not available when this analysis was prepared, so we used fall 1998 data. While these data have been published in the *2000 Digest of Education Statistics*, the fall 1998 data have been substantially revised since publication. We received corrected, pre-release fall 1998 undergraduate enrollment data from Charlene Hoffman at the National Center for Education Statistics.

State tax fund appropriations data for higher education for 1999-2000 have been collected and posted to the *Grapevine* website by Jim Palmer of the Center for Higher Education and Educational Finance at Illinois State University at:

http://www.coe.ilstu.edu/grapevine/50state.htm

Need-Based Grant Coverage

In the fall of 1998 there were 12,575,649 undergraduate students enrolled at colleges and universities in the 50 states plus the District of Columbia and Puerto Rico. During the 1999-2000 academic year, 1,939,223 undergraduate students received state need-based grants. This was 15.4 percent of the enrolled students.



Patterns. As shown in the chart on page 9, the proportion of undergraduate students receiving state need-based grants ranged from 53.8 percent in **Puerto Rico** to zero percent in **Alaska, Georgia** and **South Dakota**. At the high end of this range, three states provided need-based grants to more than a third of their undergraduate students: **Vermont** (38.5 percent), **Massachusetts** (34.7 percent) and **New York** (34.2 percent). Other states providing need-based grants to a quarter or more of their undergraduate students were **Pennsylvania, Minnesota, Kentucky** and **Illinois**.

At the low end of the scale, twenty-two states provide need-based grants to less than 10 percent of their undergraduate students. Three states--**Alaska, Georgia** and **South Dakota**--provide none at all. All three have phased out their originally modest state grant programs. Georgia has chosen to focus on its HOPE scholarship program. Alaska has a small program for graduate students. South Dakota has dropped out of state

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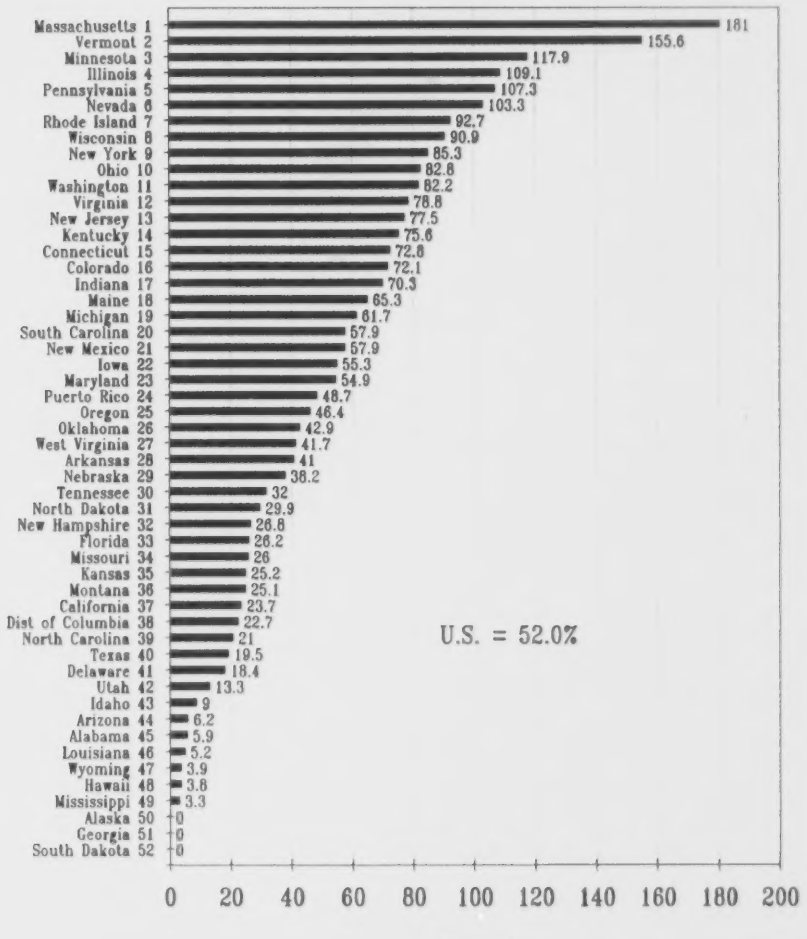
State Grant Coverage of Pell Grant Recipients 1999-2000



financial aid programs altogether. The other states assisting less than ten percent of their undergraduate students with grants in 1999-2000 were **Hawaii, Wyoming, Arizona, Mississippi, Alabama, Louisiana, Delaware, District of Columbia, Utah. Idaho, North Carolina, New Hampshire, Kansas, California, Texas, Missouri, Florida, Tennessee** and **Nebraska**.

Trends. Over the decade from 1989-90 to 1999-2000, the proportion of undergraduates receiving need-based state-funded grants increased from 11.3 to 15.4 percent. During the same period, 38 states increased the proportion of their undergraduate students receiving need-based grants, one aided the same share, and in 13 states the proportion of aided undergraduates declined.

Puerto Rico stands out from all of the other "states" by its efforts to expand coverage of its undergraduates with its own need-based grant assistance. Between 1989-90 and 1999-2000, the proportion of aided undergraduates increased from 8.1 to 48.6 percent. Other states that expanded state grant coverage of undergraduate students during the 1990s were **Massachusetts** (+21.7 percent), **Nevada** (+17.3 percent), **Virginia** (+15.0 percent), **Maine** (+14.6 percent), **South Carolina** (+13.6 percent), **Washington** (+11.7 percent), **Kentucky** (+11.6 percent) and **New Mexico** (+10.6 percent).

Georgia stands out at the bottom of the list. In 1989-90 6.9 percent of its undergraduates received need-based grants. A decade later none did. Similarly, **South Dakota** provided need-based grants to 5.2 percent of its undergraduates in 1989-90, but aided none by 1999-2000. So too did **Alaska** which had provided grants to 0.6 percent of its undergraduates in 1989-90, but none by 1999-2000.

Other states that reduced the proportion of undergraduate students that were aided with need-based grants during the 1990s include **Tennessee** (-3.5 percent), **Wisconsin** (-2.1 percent), **New York** (-2.0 percent), **Indiana** (-1.2 percent), **Wyoming** (-1.0 percent), **Hawaii** (-1.0 percent), **Arizona** (-0.8 percent), **Mississippi** (-0.6 percent), **Delaware** (-0.5 percent) and **Louisiana** (-0.1 percent).

Measuring State Effort to Meet Student Need

States vary widely in the economic welfare of the citizens, and the resources of families available to pay college attendance costs without government financial aid. Some states have high per capita personal income, while other states have high poverty rates. In previous analyses in these pages of **OPPORTUNITY** we have shown these measures to be directly related to educational attainment of each state's adult population.

Pell Grant program participation. A more direct measure of the resources available to families in each state to pay college attendance costs is the role

of the federal Pell Grant program in each state. This program assists students and families from low and moderate family income levels. It is entirely need-based. Pell recipient data are available on a state-by-state basis, and thus provide a handy and very useful measure of need across all states.

The chart on page 11 shows the proportion of undergraduate students receiving federal Pell Grants for the 1999-2000 academic year. In **Puerto Rico** there were more Pell Grant recipients than fall term students. Apparently, in Puerto Rico, nearly all enrolled college students come from low or moderate family income backgrounds and thus qualify for and use Pell Grants to finance their higher educations.

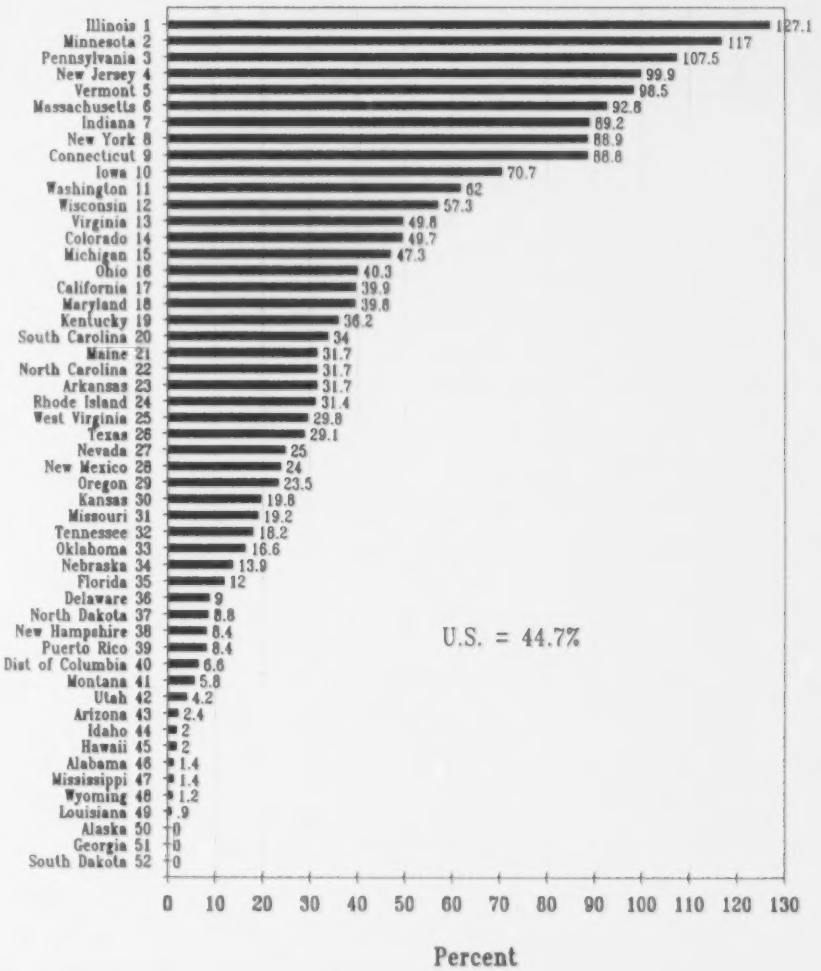
Outside of Puerto Rico, the proportion of undergraduate students receiving federal Pell Grants ranges from 14.5 percent to 45 percent. In four states more than 40 percent of the undergraduates receive Pell Grants: **Mississippi** (45.0 percent), **Montana** (43.1 percent), **Louisiana** (40.1 percent) and **New York** (40.1 percent). In six states less than 20 percent of the undergraduates receive Pell Grants: **District of Columbia** (14.5 percent), **Delaware** (16.2 percent), **Rhode Island** (17.1 percent), **Nevada** (17.4 percent), **Massachusetts** (19.2 percent) and **Wisconsin** (19.3 percent).

State grant coverage of Pell grant recipients. For 1999-2000, 1,939,223 state need-based grant awards were made to needy undergraduates. By comparison, 3,732,732 federal Pell Grant awards were made to needy students. State grants reached 52.0 percent of the Pell Grant population.

However, across the states this proportion varied enormously, from zero in three states to 181 percent in another state. At the low end three states provided no need-based grants to their own low income students. **Alaska** undergraduates received 5,345 Pell Grants from the federal government, but nada from their own state. **Georgia** undergraduates received 99,184 federal Pell Grants, but zip from their own state. **South Dakota** undergraduates received 13,202 federal Pell Grants, but zero support from their own state. Seven other states provided state need-based grants to less than 10 percent of their lowest income/highest need undergraduate students: **Mississippi** (3.3 percent), **Hawaii** (3.8 percent), **Wyoming** (3.9 percent), **Louisiana** (5.2 percent), **Alabama** (5.9 percent), **Arizona** (6.2 percent) and **Idaho** (9.0 percent).

At the other end of this scale, **Massachusetts** undergraduates received 109,893 state need-based grant awards and 60,731 federal Pell Grants in 1999-2000. Five other states provided state need-based grants to more students than the federal government did. They were: **Vermont** (155.6 percent), **Minnesota** (117.9 percent), **Illinois** (109.1 percent), **Pennsylvania** (107.3

State Grant Dollars Compared to Pell Grant Dollars 1999-2000



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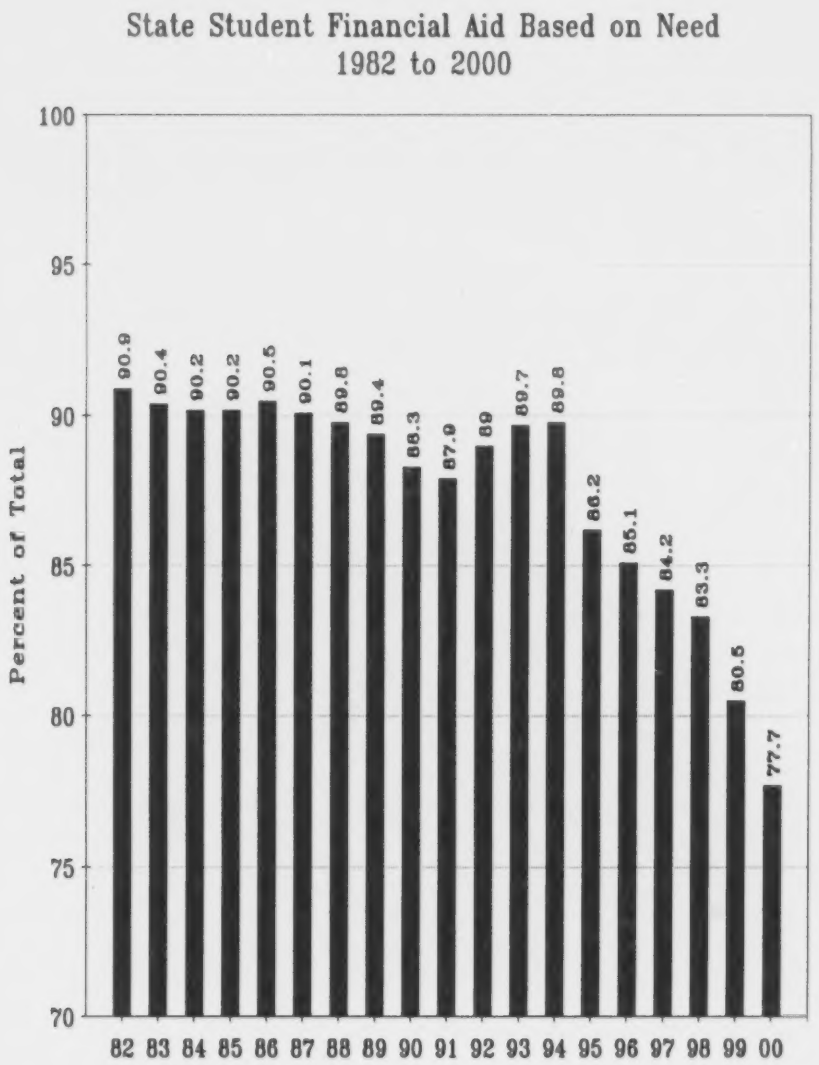


percent) and **Nevada** (103.3 percent). These states clearly recognize the financial needs of their undergraduate students and make serious efforts to help them.

Dollar efforts. Of course state grants cannot accomplish much unless states appropriate real money to fund them. For 1999-2000 states spent $3.2 billion on need-based grants for undergraduate students, compared to the $7.1 billion provided by the federal government to the Pell Grant program. The state funding effort was 44.7 percent of the federal funding effort.

But the range across the states make the national average meaningless. Three states appropriated nothing at all, while three other states provided more state funds than the federal government provided to help financially needy undergraduate students pay for their higher educations.

The three stingiest states were the same triad: **South Dakota, Georgia** and **Alaska.** But **Louisiana, Wyoming, Mississippi, Alabama, Hawaii, Idaho** and **Arizona** also only provided 1 to 2 percent for state grants of what the federal government provided.

At the other end of the scale, three states provided more state funds for needy undergraduate students than did the federal government: **Illinois** (127.1 percent), **Minnesota** (117.0 percent) and **Pennsylvania** (107.5 percent). These states clearly stand out by their superior efforts to assist students. But seven additional states nearly equaled federal Pell Grant funding levels in 1999-2000: **New Jersey** (99.9 percent), **Vermont** (98.5 percent), **Massachusetts** (92.8 percent), **Indiana** (89.2 percent), **New York** (88.9 percent) and **Connecticut** (88.8 percent). And **Iowa, Washington** and **Wisconsin** provided at least half of what the feds provided in Pell Grant funding.

Non-Need Based Financial Aid

About 22 percent of the financial aid awarded by states was not need based in 1999-2000. This was $925 million. About 83 percent of this aid for undergraduates was awarded by just eight states: **Georgia, Florida, Ohio, Louisiana, North Carolina, South Carolina, Virginia** and **Mississippi.** All but one of these states are in the south, and in fact Florida has been the granddaddy of all states in this area. Most--but not all--of non-need based student aid is merit scholarships, designed to encourage and/or reward students for academic performance.

Up through FY1994, about 90 percent of all state student financial aid was awarded on the basis of demonstrated financial need. This term means that students had to apply for financial aid, providing detailed family financial information, and their need was then determined by complex federal formulas detailed in Title IV of the Higher Education Act.

Since FY1994, the share of state student financial aid awarded to students on the basis of need has shrunk to about 78 percent of the total awarded. This shrinking share is more the result of very fast growth in merit scholarship and other non-need based programs in a few states--**Georgia, Florida, Louisiana, Mississippi, Missouri, New Jersey, New Mexico, North Carolina, Ohio, South Carolina and Virginia**--than lack of growth in need-based student aid. In fact, in 42 states need-based student financial aid still represents a majority of aid offered to undergraduate students. In only eight states is non-need based aid better funded than need-based aid.

Summary

States spent about $3.2 billion to assist 1.9 million needy undergraduate students to finance their higher education in 1999-2000. By comparison the federal Pell Grant program provided $7.2 billion to 3.7 million needy undergraduates.

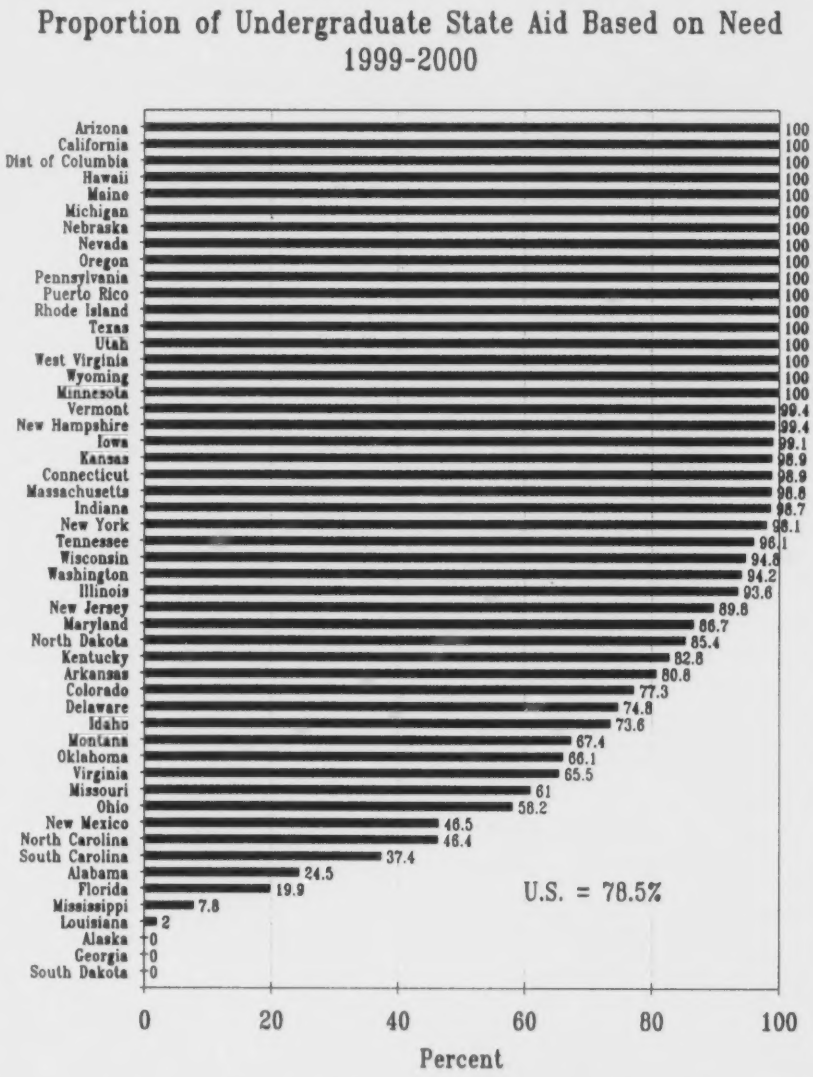
This does not count the state appropriations totalling $53.4 billion for FY2000 to institutions that held tuition charges to about a third of costs of educating students. In this sense all students enrolled in public institutions received even larger state assistance, although this is not commonly referred to as financial aid.

What stands out in this analysis is the extraordinary variety in the ways states approach assisting students to pay college attendance costs. State efforts to help needy undergraduates range all the way from zero to state-funded grant programs that exceed the federal Pell Grant program in those states.

While few states outside of the South have significant merit scholarship programs, some states have put all of their eggs in this one basket and have chosen to ignore need-based grant programs altogether.

Since FY1994 states have been shifting their financial aid investments away from need and toward merit. Historically this has been the path chosen by southern states, especially Florida and more recently Georgia. The merit preference is still primarily the choice of the South, but new programs are expanding into all-need states in the North and West.

A political assessment of financial aid suggests that state financial aid programs may provide greater visibility to state efforts to assist students than do state appropriations to institutions. Students enrolled in public institutions too often seem oblivious (and unappreciative) of the role state appropriations play in reducing the tuition charges they face. State student financial aid programs, on the other hand, are more recognizable as state financial assistance to students. And in most states legislators relish creating new programs to fill apparent but often tiny niches. This process of experimentation will likely continue.



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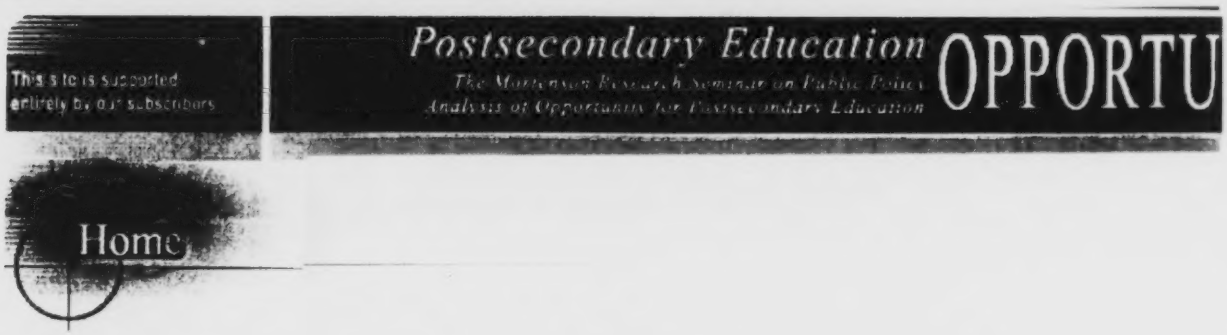
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Sex on campus . . .

College Participation by Gender Age 18 to 24
1967 to 2000

In past issues of OPPORTUNITY we have reported our analyses of higher education data by gender in many ways. Here we add another perspective on the same issue: the college enrollment rates of 18 to 24 year olds by gender.

These data have been collected by the Census Bureau through the October Current Population Survey since 1967. What they show is simply astounding:

- The proportion of men ages 18 to 24 enrolled in college has *declined* from 33.1 percent in 1967 to 32.6 percent in 2000.
- The proportion of women ages 18 to 24 enrolled in college has *doubled* between 1967 and 2000, from 19.2 to 38.4 percent.

Indeed we are finally convinced: young men and women are truly living in completely different worlds. John Gray is right: men are from Mars and women are from Venus. Young men and women could not possibly be living on the same planet at the same time and exhibit such contrasting college enrollment behaviors. Young men and women must be living in completely different worlds.

When these data are disaggregated into high school graduation rates and college enrollment rates for those who graduated from high school, the several sources of these disparate trends becomes somewhat clearer (although the question Why? is not answered).

- Between 1967 and 2000, the high school graduation rates increased by 5.4 percent for men and by 7.5 percent for women.
- Among those who had graduated from high school, between 1967 and 2000 the college enrollment rate for men *declined* by 3.8 percent, but it *increased* by 20.5

Percent of Population Age 18 to 24 Enrolled in College by Gender, 1967 to 2000

percent for women.

Of course in the late 1960s and early 1970s many young men chose to enroll in college rather than be inducted into the military for service in Vietnam. Young women were exempted from this choice. This meant that they lived in different worlds at that time. Apparently they still do.

Across racial/ethnic groupings of the population, a larger share of women than men are enrolled in college between the ages of 18 and 24 years. There is only one exception--Asians and Pacific Islanders--where more males than females participate in higher education. In every other population group, women were enrolled in college at considerably higher rates than men in 2000.

These and other findings result from our analysis of historical Census Bureau data collected since 1967. Here we explore these data. They tell a powerful story about the incredible changes in the gender distribution of college enrollments over the last 34 years.

The Data

Nearly all of the data used in this analysis are collected by the Census Bureau in the October Current Population Survey each year. This is a monthly survey of about 50,000 households designed to collect data on employment and unemployment of the civilian, noninstitutional population of the United States. The October supplement to the CPS also collects data on school enrollments. (The March CPS supplement collects data on educational attainment.)

These data are published in the annual P20 series of Current Population Reports by the Census Bureau. (Data from the CPS are also published by the Bureau of Labor Statistics.) The P20 reports are available in PDF format for downloading from the Census Bureau's website at:

http://www.census.gov

These data have also been compiled from the annual reports into a single table available for downloading from the Census Bureau's school enrollment webpage at:

http://www.census.gov/population/www/socdemo/school.html

The data used in this analysis are neatly summarized in Table A-5 under Historical Tables.

College Participation Trends

The chart on page 1 of this issue of **OPPORTUNITY** shows the proportion of male and female 18 to 24 year olds enrolled in college in October for each year from 1967 through 2000.

Population. The number of people between the ages of 18 and 24 years in the civilian, noninstitutional population increased from 20.0 in 1967, to a peak of 29.0 million in 1980, then declined to a nadir of 24.2 million in 1992, and then resumed growth to 26.7 million in 2000. Over this same period the number of 18 to 24 year olds that were enrolled in college increased almost steadily from 5.1 million in 1967, to 9.5 million by 2000.

The *rate* at which the population of 18 to 24 year olds was enrolled in college increased from 25.5 percent in 1967 to 35.5 percent in 2000. Compared to the 1967 rate, the higher college participation rate in 2000 added nearly 2.7 million students or 40 percent to those enrolled in higher education between the ages of 18 and 24 years.

High school graduation. Between 1967 and 2000 the number of high school graduates in the civilian, noninstitutional population of 18 to 24 year olds increased from 15.1 to 21.8 million. The number actually reached

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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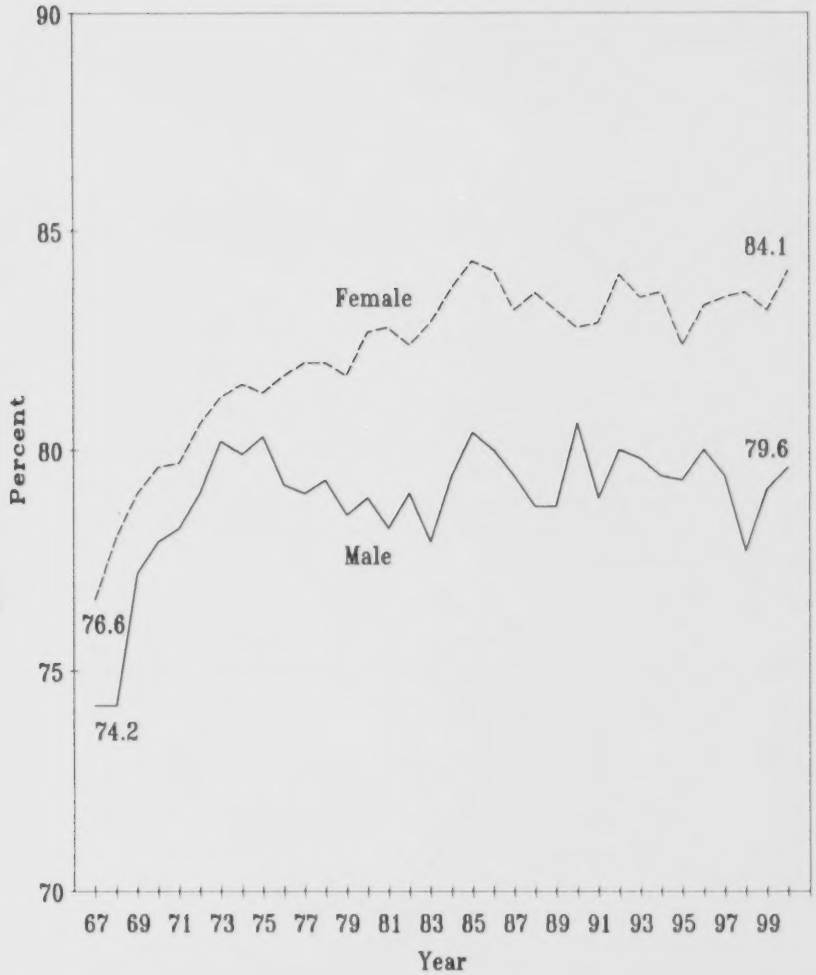
Population Age 18 to 24 Graduated from High School by Gender, 1967 to 2000



a peak of 23.4 million in 1980, then declined to a nadir of 19.8 million in 1993, before resuming growth to 21.8 million in 2000.

The high school graduation *rate* increased from 75.5 to 81.9 percent between 1967 and 2000. Most of this increase occurred between 1967 and about 1973, with little gain thereafter.

Note that the Census Bureau counts and reports as one number both regular high school diploma recipients *and* those earning alternative certificates (mainly GED recipients) as high school graduates. By our estimates (see **OPPORTUNITY** #108) the share of the total high school graduates as reported by Census with diplomas declined while the share with GEDs increased during this period.

College continuation. For those who have graduated from high school (or passed the GED), the number enrolled in college at the time of the October CPS increased from 5.1 million to 9.5 million. Their college continuation *rate* increased from 33.7 percent in 1967 to 43.3 percent in 2000. This rate ranged from a low of 29.7 percent in 1973 to a high of 45.3 percent in 1998 over this period.

Gender Trends

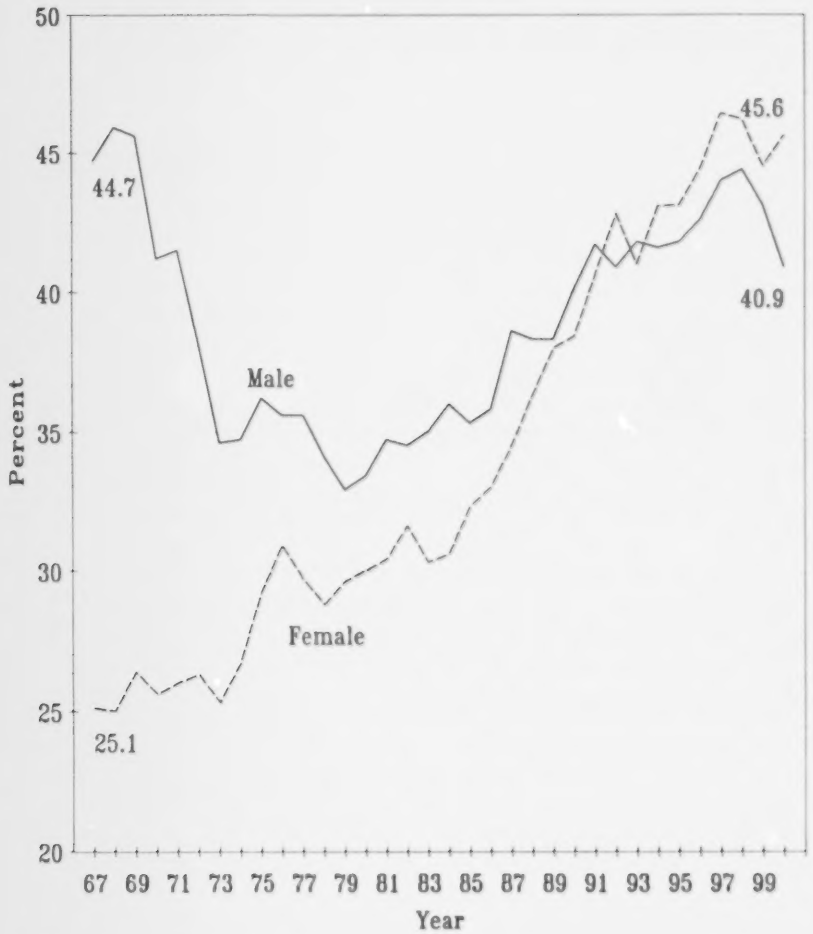
College participation. The chart on page 1 tells the story best. Between 1967 and 2000, the college participation rate for males 18 to 24 in the civilian noninstitutional population decreased from 33.1 to 32.6 percent. The corresponding rate for females increased from 19.2 to 38.4 percent during this same period.

The increased rate for women occurred steadily throughout the 34 years between 1967 and 2000, although the growth appears to have paused since 1997. There was no growth spurt for females. Mostly it was just steady growth blemished only by occasional statistical spikes which turn out to be meaningless over the time period.

The story for males, however, is completely different. The college participation rate for males peaked at 35.2 percent in 1969, during the Vietnam War, when males were allowed exemption from the military draft in place at the time if they were enrolled in college on a full-time basis. Following the end of conscription for military service in 1973, male college participation dropped to a low of 25.8 percent in 1979, then increased to 35.0 percent in 1997 before falling back to 32.6 percent in 2000.

(Note also that the Current Population Survey is limited to the civilian, noninstitutional population. The CPS does not include those in military service. Between 1967 and the mid 1970s, when military staffing was at its peak for the Vietnam War, a large number of males between the ages of 18 and 24 years were in military service and hence do not appear in the denominator of this college participation rate. This absence from

Population Age 18 to 24 Enrolled in College that Graduated from High School by Gender 1967 to 2000



the denominator inflates the calculated and reported college participation rate for males during this period of military build-up.)

High school graduation. The proportion of the male and female population age 18 to 24 that is classified as high school graduate by the Census Bureau is shown in the chart on page 3. In October 2000 79.6 percent of the men and 84.1 percent of the women were reported as high school graduates. Remember that the Census Bureau counts GED recipients as high school graduates.

Between 1967 and 2000 the high school graduation rate for women increased by 7.5 percent, compared to an increase of 5.4 percent for men. The sharp increases between 1967 and the mid 1970s could also be influenced by the absence of high school graduates who were serving in the military during the Vietnam War.

Since 1975, the high school graduation rate for males has declined by 0.7 percent, while it increased by 2.8 percent for women.

College continuation. Among high school graduates, the college continuation rate for women was 45.6 percent and 40.9 percent for men in October 2000. These data are shown in the chart on this page.

The differences in college continuation rates for women and men over the last 34 years are stunning. For men the college continuation rates have *declined* by 3.8 percent. For women these rates have *increased* by 20.5 percent.

There are two reasonably distinct eras in these data. Male college continuation rates were sharply influenced by the Vietnam War and the statutory exemption from military service for full-time college enrollment that lasted up to 1973. Women were not subject to the military draft and their higher education enrollment decisions were thus made on other bases than those influencing young men at the time. Between 1967 and 1974 the college continuation rate for males dropped by 10.0 percent, but increased by 1.6 percent for females.

But even after the Vietnam War, the college continuation rates for men and women diverged. Between 1980 and 2000 the college continuation rate for male high school graduates increased by 7.5 percent. This rate increased by 15.6 percent for women during the same period.

The college continuation rate for female high school graduates first surpassed the male rate in 1992, and surpassed the male rate for good in 1994. By 2000 4.7 percent, the widest gap in the last 34 years of recorded data.

While the Vietnam War/military draft/exemption from service for full-time college enrollment provided a strong incentive for males to pursue higher education, its influence was temporary. After the draft and War ended both male and female college

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graduates continued to make progress in pursuit of college enrollment. But women made about twice the progress of men during this period, and by the mid 1990s had surpassed male continuation rates. The momentum of women's progress continues to widen the gap with men in the most recent Census data among 18 to 24 year olds.

Race/Ethnicity

College participation rates vary across racial and ethnic groups of the population. They also vary by gender within racial/ethnic groups. Among the larger groups, females generally perform better than males. These include white non-Hispanics, black non-Hispanics, and Hispanics. However, among Asians a different pattern emerges.

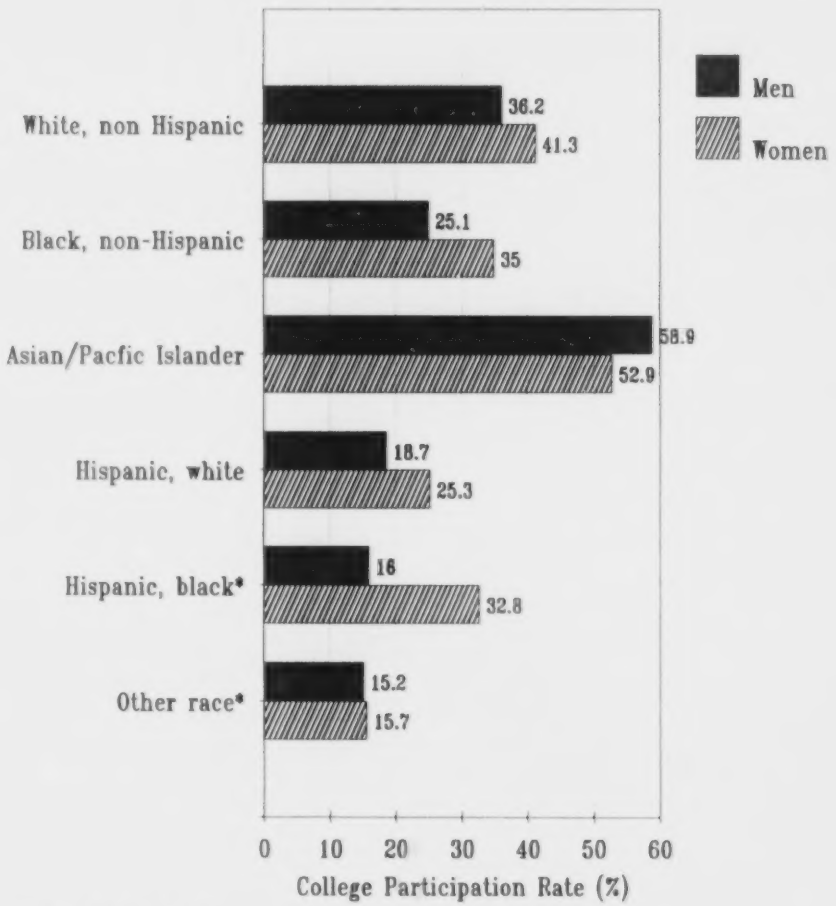
In October of 2000, noninstitutional civilians ages 18 to 24 years were distributed in the population, among high school graduates and enrolled college students into the following distinct groups:

	Pop.	HSG	College
white nH	65.0%	69.6%	71.0%
black nH	14.5%	13.8%	12.5%
Asian/PI	4.3%	4.8%	6.8%
Hispanic	15.5%	11.3%	9.5%
Other	0.7%	0.5%	0.2%
Total	100.0%	100.0%	100.0%

Note that Hispanics may be of any race. In our analysis of the Census Bureau data, the Hispanic population of 18 to 24 year olds is 95 percent white and 5 percent black.

White non-Hispanic. In October of 2000, there were 17,327,000 white non-Hispanics ages 18 to 24 in the civilian noninstitutional population. Of this total 15,187,000 were high school graduates and 6,709,000 were enrolled in college. They constituted 65.0 percent of the total population of 18 to 24 year olds. This is down slightly from 66.2 percent in 1993, the first year this proportion can be calculated from our Census data source.

College Participation Rates by Gender and Race/Ethnicity
Among 18 to 24 Year Olds
2000



* Average of 1999 and 2000.

The college participation rates for white non-Hispanics were 36.2 percent for males and 41.3 percent for females. Since 1993 the college participation rate trends are generally downward for males, and upward for females. The male rate increased from 36.6 percent in 1993 to a peak of 39.5 percent in 1997, and then dropped to 36.2 percent in 2000. The female rate increased from 37.1 percent in 1993, to 42.1 percent in 1998, and then back to 41.3 percent in 2000.

The components of the above college participation rate are the high school graduation rate, and the college continuation rate for those who have graduated from high school (or received GEDs).

In 2000 the proportion of 18 to 24 year old white non-Hispanic males who were high school graduates was 86.4 percent, compared to 88.9 percent for females. Between 1993 and 2000 the high school graduation has drifted upward slightly for both

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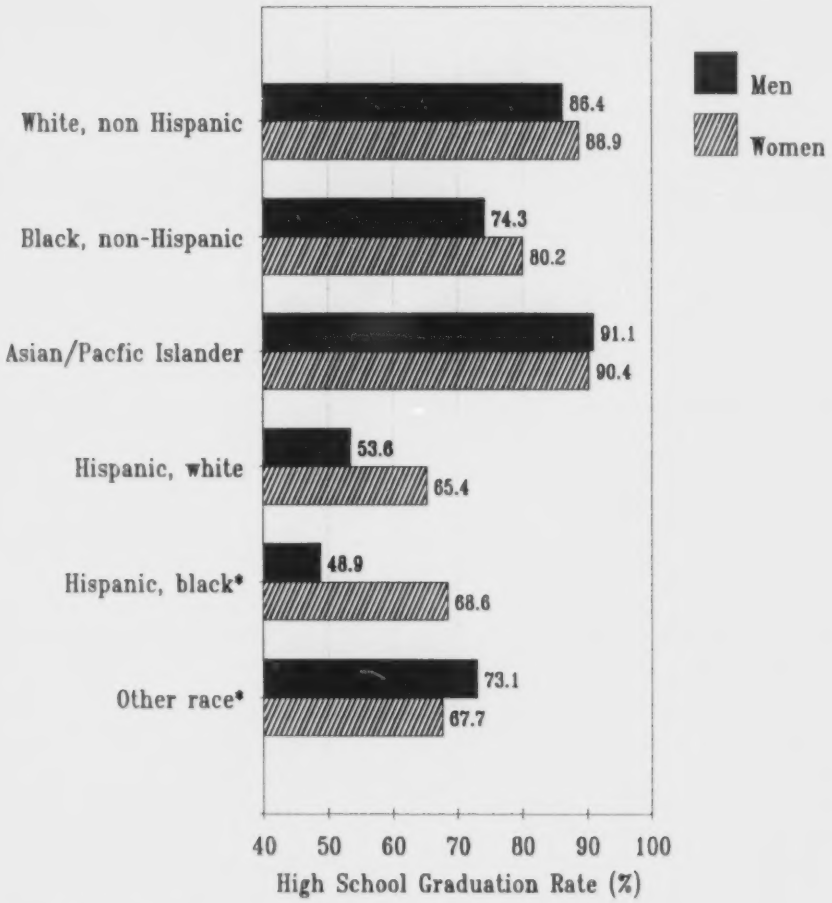
High School Graduation Rates by Gender and Race/Ethnicity Among 18 to 24 Year Olds 2000



* Average of 1999 and 2000.

males and females. For males the increase has been 1.5 percent, and for females it has been 0.3 percent.

The college continuation rates for white non-Hispanic high school graduates in 2000 were 41.9 percent for males and 46.4 percent for females in 2000. Since 1993 the college continuation rate for males has declined by 1.1 percent, while it increased by 4.5 percent for females. This rate declined between 1998 and 2000 for both males and females.

Black non-Hispanic. In October of 2000 there were 3,875,000 black non-Hispanics ages 18 to 24 in the civilian noninstitutional population. Of these 3,002,000 were high school graduates and 1,182,000 were enrolled in college.

In 2000 25.1 percent of the males were enrolled in college, compared to 35.0 percent of the females. Between 1993 and 2000 the college participation rate for black males increased by 2.2 percent, while it increased by 9.1 percent for black females.

The high school graduation rate among black non-Hispanic males was 74.3 percent compared to 80.2 percent for females. Between 1993 and 2000 the high school graduation rate for the males increased by 1.3 percent, compared to an increase of 3.3 percent for females.

The college continuation rate for black male high school graduates in 2000 was 33.8 percent, up by 2.4 percent since 1993. The rate for females was 43.9 percent, up by 10.2 percent during the same period.

Asian/Pacific Islander. In October 2000 there were 1,143,000 Asian or Pacific Islanders ages 18 to 24 years in the civilian noninstitutional population. Of these 1,038,000 were high school graduates and 639,000 were enrolled in college.

The college participation rate for male Asian/PIs in 2000 was 58.9 percent compared to 52.9 percent for females. Both the male and female rates for Asian/PIs were the highest across racial/ethnic groups.

The high school graduation rate for male Asian/PI was 91.1 percent in 2000, compared to 90.4 percent for females. However, these are based on small numbers with large standard errors. When the 1999 and 2000 data are averaged, the high school graduation rates were 89.8 percent for males and 91.3 percent for females. Clearly more data are needed here--the additions to this time -series in future years will clarify this picture somewhat. It is clear, however, that Asians--both males and females--have the highest high school graduation rates of any identifiable racial/ethnic population group.

The college continuation rates for Asian/PI high school graduates in 2000 were 64.7 percent for males and 58.5 percent for females.

Hispanics. In October of 2000 there were 4,134,000 Hispanics ages 18 to 24 in the civilian noninstitutional population. Of these 2,462,000 were high school graduates and 899,000 were enrolled in college according to the Census Bureau.

Note that Hispanics may be of any race. Hispanics are an ethnic group. The Census data used in this analysis permit a disaggregation of the Hispanic data by race. In 2000, among this age group, 95 percent reported themselves as white, and 5 percent reported themselves as black. Because the Hispanic black numbers are so very small, we have averaged 1996 through 2000 derived numbers to reduce statistical noise.

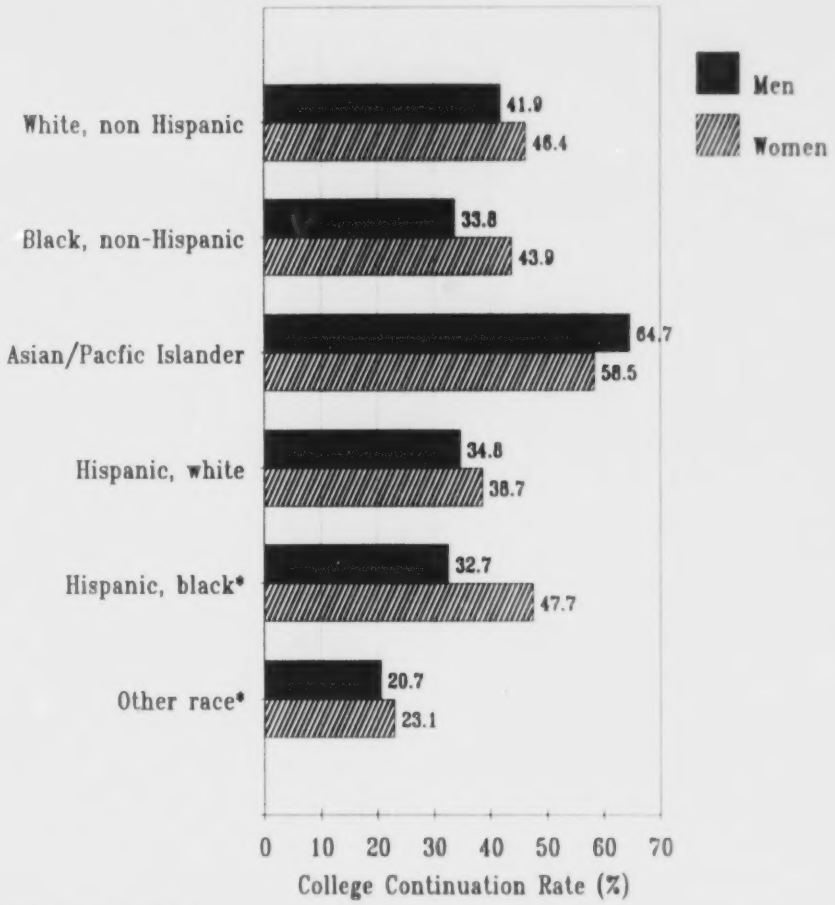
The college participation rate for Hispanic white males age 18 to 24 among the civilian noninstitutional population was 18.7 percent in 2000, compared to 25.3 percent for similar females. Among Hispanic black males the college participation rate averaged 16.0 percent for 1996-2000, compared to 32.8 percent for Hispanic black females.

The high school graduation rate for Hispanic white males was 53.6 percent in 2000, compared to 65.4 percent for Hispanic white females. The rate for Hispanic black males averaged 48.9 percent for the years 1996-2000, compared to 68.6 percent for Hispanic black females.

The college continuation rate in 2000 for those who had graduated from high school was 34.8 percent for Hispanic white males, compared to 38.7 percent for Hispanic white females. For Hispanic black males the average rate for 1996-2000 was 32.7 percent, compared to 47.7 percent for Hispanic black females.

Among both Hispanic groups--white and black--the high school graduation, college continuation, and resulting college participation rates for females were consistently considerably higher than they were for males.

College Continuation Rates by Gender and Race/Ethnicity for High School Graduates 18 to 24 Year Olds 2000



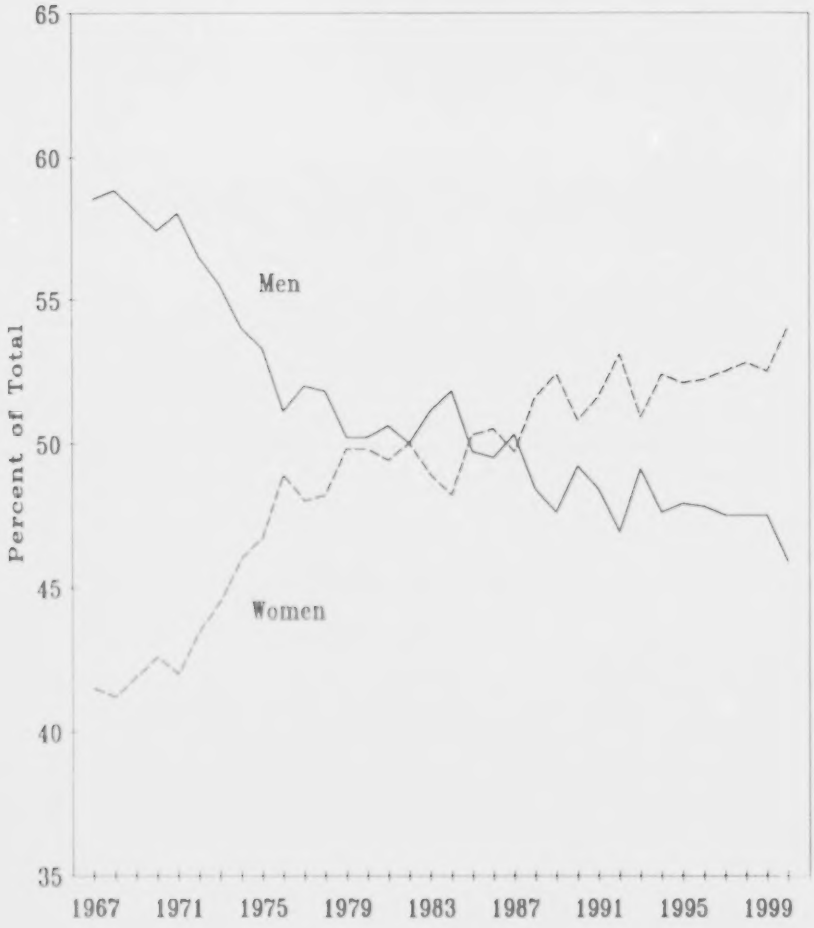
* Average of 1999 and 2000.

Other race. The data for this population group is a residual calculated by subtracting from the total population the reported numbers for whites, blacks and Asian/Pacific Islanders. The resulting numbers are tiny, amounting to 0.7 percent of the population, 0.5 percent of the high school graduates, and 0.2 percent of those enrolled in college among 18 to 24 year olds in the civilian noninstitutional population. While we have calculated the college participation, high school graduation and college continuation rates for men and women in these groups, and averaged them for 1999-2000, the results should not been given any special consideration. In future years, if consistent patterns emerge, they may be given some consideration.

Enrollment Distribution by Gender

Finally, the enrollment distribution by gender of college students between the ages of 18 and 24 years illustrates the shift that has been happening since

Distribution of Enrollments by Gender
18 to 24 Year Olds
1967 to 2000



1967. The influence of the Vietnam War on male college enrollments in the late 1960s through the mid 1970s is readily apparent in this chart.

But even after the Vietnam War ended, a larger share of college enrollments were male than female through the early 1980s. (In the civilian, noninstitutional population, males now constitute almost exactly 50 percent of the population of 18 to 24 year olds. In 1970, during the Vietnam War, males were about 46 percent of this population.) In 1982 for the first time there was a 50:50 gender distribution. This lasted through about 1987. Thereafter, the female share continued growing and the male share shrunk.

By October 2000 the male share of 18 to 24 year old college enrollments had shrunk to 45.9 percent, the lowest at any point in the 34 year history of this time series of Census data.

It is not that male college enrollments failed to grow since 1967. In fact they have grown by nearly 46 percent between 1967 and 2000. But female college enrollments have grown faster, by 141 percent over the same period. So by 2000 there were 766,000 more females between the ages of 18 and 24 years enrolled in college than there were males.

Summary

Since 1995 we have been using data to illustrate the very different accomplishments of men and women in the educational system. Here the college enrollment data for 18 to 24 year olds adds to that story.

All data say about the same thing: women have done extraordinarily well in the K-12 and higher educational systems over the last three decades, and men by comparison have not done well at all.

One remedy to the declining share of male college enrollments is uniquely clear in this data: War! Young men appear to respond well to the college enrollment option when the alternative is being drafted into military service to fight in an overseas war with substantial casualties reported every day in the media. As many have observed: the threat of death focuses one's attention immediately.

In the absence of the threat of war and conscription for military service, males do not appear to be responding to the college enrollment option with the same enthusiasm that they did in the late 1960s and early 1970s. Not are they responding to the college enrollment option as enthusiastically as are young women.

We should be asking why this is so. Given the very much larger economic returns to a college education for men than for women (nearly twice), one might expect men to be pursuing college more aggressively than women. That they are not is a mystery yet to be understood, and without understanding there can be no solution.

Admissions Selectivity of Colleges and Universities 1986 to 2001

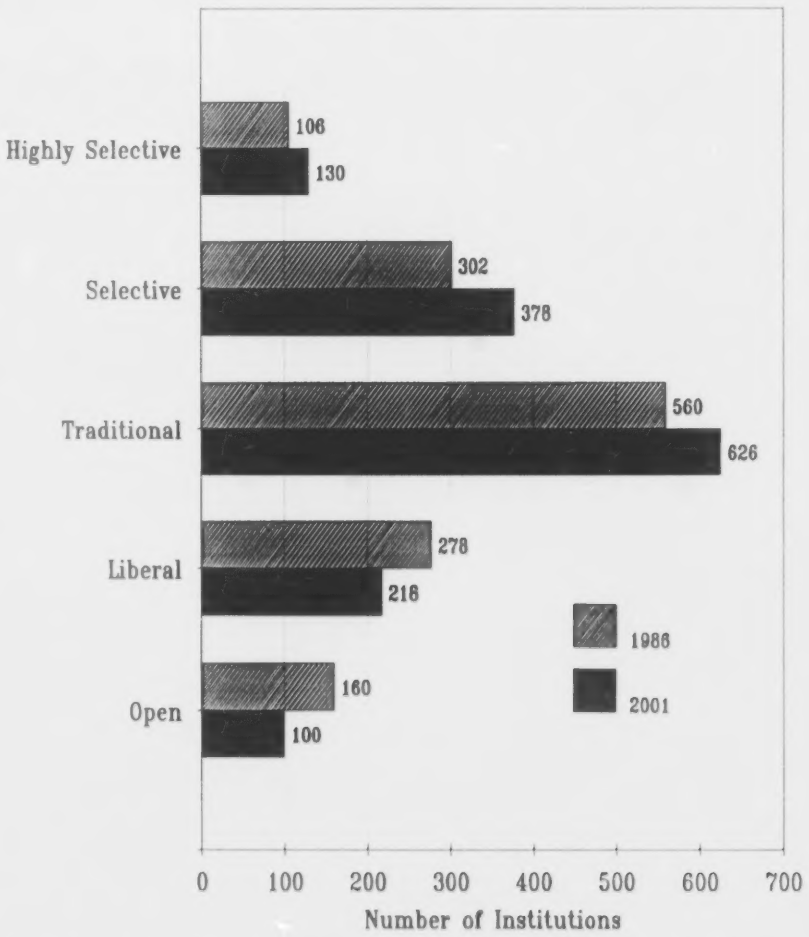
Between 1986 and 2001 four-year colleges and universities have grown substantially more selective in their freshmen admissions. The number of four-year institutions that practice the most selective admissions has increased. This change has occurred in both public and private institutions.

This increasing admissions selectivity has expanded higher educational opportunities for students who graduate in the top half of their high school graduating classes. There are more colleges and universities, both public and private, eager to enroll these students.

However, increasing admissions selectivity has substantially reduced access to both public and private four-year colleges for students who graduate from the bottom half of their high school graduating classes. The numbers of four-year colleges and universities, both public and private, that practice liberal or open admissions and thus provide access to students from the bottom half of their high school classes has gone down steadily and substantially. Fewer four-year colleges are willing to enroll high school graduates from the bottom half of their graduating classes.

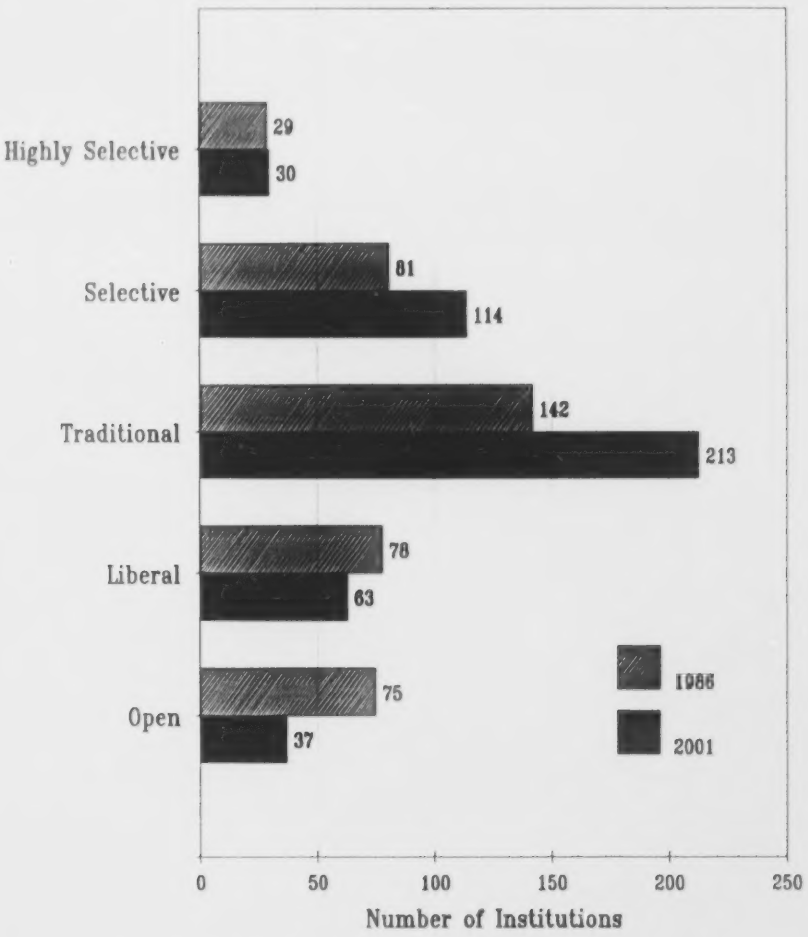
Because of the high degree of correlation between admissions selectivity standards and student characteristics like family income, parental educational attainment, race/ethnicity and other characteristics of under-represented groups in higher education, the increasingly selective public and private four-year colleges and universities increasingly favor students born into affluent families, with college educated parents, who are more likely to be white and Asian. Increasing academic selectivity of institutions works against inclusion of students from lower income families, where parents have the least formal education, and against under-represented racial and ethnic groups like blacks, Hispanics and American Indians.

Number of 4-Year Colleges and Universities
by Admissions Selectivity
1986 and 2001



Where higher educational opportunity has the potential to be an integrating and blending force in social change, the increasing academic selectivity of public and private four-year colleges and universities is having the reverse effect. These higher educational practices are now serving to strengthen the social class structure, favoring children born into privilege and turning away from those children born into lower class families. Instead of bridging the huge and widening divides in private welfare in the United States, higher education admissions practices have become a major tool in the rigid stratification

Number of Public 4-Year Colleges and Universities
by Admissions Selectivity
1986 and 2001



and preservation of privilege that our immigrant ancestors escaped in their native homelands. We are re-establishing feudal systems of inherited privilege that lock us into social stagnation.

It is our view that higher education--particularly public and private four-year colleges and universities--has become a part of the great American problem of the rich getting richer and the poor getting poorer. Higher education's selective admission practices, which have strengthened during the last fifteen years, increasingly favor those born into privilege and disfavor those born into less fortunate economic and social class circumstances.

In this analysis of the selectivity of colleges and universities we update a study we reported in OPPORTUNITY in 1998. The trends toward increasing admissions selectivity that we documented then have only gotten worse in the last three years.

The Data

The data on admissions selectivity of institutions are collected each year by ACT on its Institutional Data Questionnaire (IDQ). ACT collects a wide variety of data from about 2500 public and private colleges and universities that it uses in its assessment and other activities.

One of the major reports from this survey is ACT's annual *National Dropout and Graduation Rate Report*. This report has been produced since 1983 and provides data on freshman-to-sophomore attrition and three-year and five-year institutional graduation rates by institutional control, highest degree offered and admissions selectivity.

OPPORTUNITY has compiled the data from these reports into two large Excel spreadsheets available for examination on our website under the Spreadsheets button. Go to:
http://www.postsecondary.org

OPPORTUNITY will update and extend our previous reports on freshman-to-sophomore persistence and five-year institutional graduation rates based on the recently released 2001 reports in coming months.

Here we use the data self-reported by institutions on the IDQ on their admissions selectivity. These data have been included on ACT's annual reports since 1986. Thus, fifteen years of data on admissions selectivity are available for public and private four-year institutions by highest degree offered.

Those with additional questions or comments on ACT's annual *National Dropout and Graduation Rate* report should contact Dr. Wes Habley at ACT at (319) 337-1000 or habley@act.org.

Institutions

This analysis is limited to four-year colleges and universities, of which

ACT has collected data on 1452 in 2001. Two-year colleges rarely practice selective admissions and thus do not restrict their accessibility through their admissions practices. We do not analyze them here.

These four-year institutions are classified by:

- Control (public and private)
- Highest degree offered (associate, bachelor's, master's, PhD)
- Admissions selectivity (highly selective, selective, traditional, liberal and open)

These data provide an opportunity, not fully developed here, to study "mission creep." As institutions extended their degree offerings upward over the last 15 years, they logically shift classification under Highest Degree Offered. Many four-year colleges have added master's degree programs, and thus shifted classifications. Similarly, former master's degree universities have added doctoral programs. Between 1986 and 2001, the number of public and private institutions by highest degree offered changed as follows:

	Public	Private	Total
Associate	-2	-45	-47
Bachelor's	-3	-149	-152
Master's	+3	+86	+89
PhD	+52	+45	+97

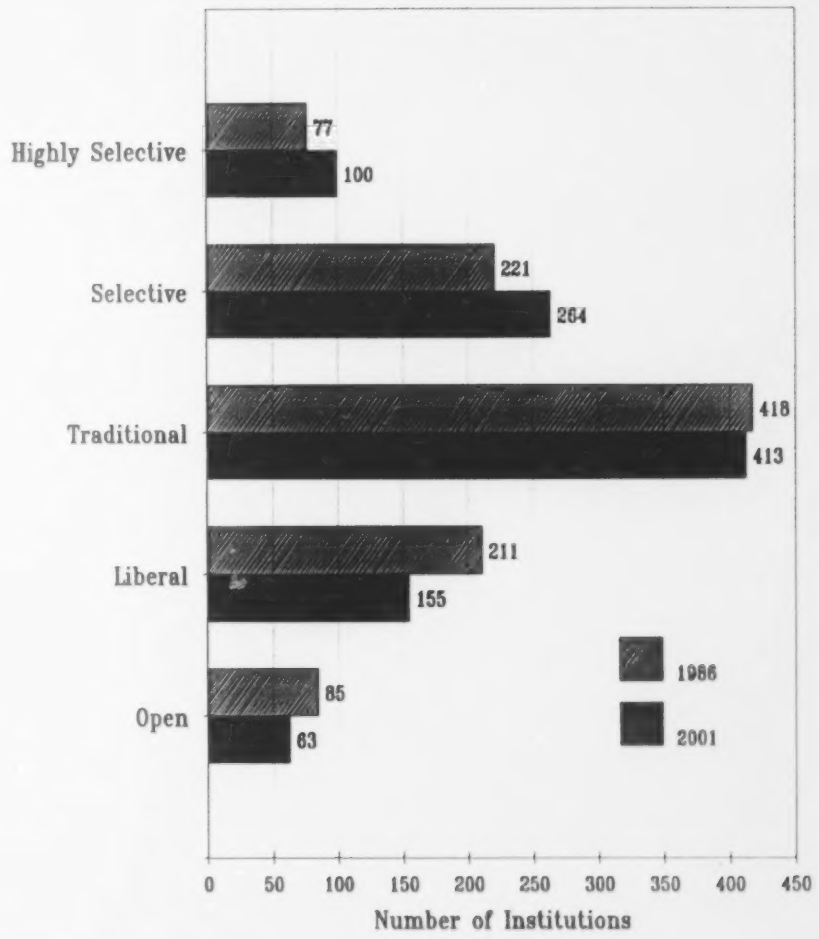
Between 1986 and 2001, the number of public four-year institutions reported in the ACT graduation rate report increased from 405 to 457. The number of private four-year institutions reported declined from 1012 to 995.

Rather our interest here is in freshman admissions selectivity, as reported by institutions on ACT's IDQ. Institutions check-off responses to the following question on the IDQ:

Check the category which best describes to prospective students your freshman admissions policy (as applied to in-state or in-supporting-area students).

___ *1. Highly selective (majority of accepted freshmen in top 10 % of high school graduating class)*
___ *2. Selective (majority of accepted freshmen in top 25% of high school graduating class)*
--- *3. Traditional (majority of accepted freshmen in top 50 % of high school graduating class)*
___ *4. Liberal (some freshmen from lower half of high school graduating class)*
___ *5. Open (all high school graduates accepted, to limit of capacity)*

Number of Private 4-Year Colleges and Universities by Admissions Selectivity 1986 and 2001



These admissions selectivity responses correspond to the following typical college admissions test score ranges:

	ACT	SAT
Highly sel.	27-31	1220-1380
Selective	22-27	1030-1220
Traditional	20-23	950-1070
Liberal	18-21	870-990
Open	17-20	830-950

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While ACT does not report parental income by these scores directly, ACT's *High School Profile Report, Normative Data* does report average ACT composite scores of estimated family income ranges. For 2000 these were:

LT $18,000	18.3
$18,000-24,000	19.1
$24,000-30,000	19.8
$30,000-36,000	20.4
$36,000-42,000	20.7
$42,000-50,000	21.1
$50,000-60,000	21.6
$60,000-80,000	22.1
$80,000-100,000	22.6
GT $100,000	23.4

Additionally, ACT has provided **OPPORTUNITY** with data on ACT composite scores and high school course-taking patterns by family income (and gender and race/ethnicity). These data were last published in **OPPORTUNITY** in February 2000 (available on our website).

Trends in Admissions Selectivity

A shown in the chart on page 9, the number of public and private four-year institutions participating in ACT's IDQ survey that practice selective admissions increased, while the number of institutions that practiced open-door admissions decreased, between 1986 and 2000.

- The number of institutions practicing highly selective admissions increased from 106 to 130.
- The number practicing selective admissions increased from 302 to 378.
- The number practicing traditional admissions selectivity increased from 560 to 626.
- The number practicing liberal admissions decreased from 278 to 218.
- The number practicing open admissions declined from 160 to 100.

These numbers are disaggregated by control for public institutions in the chart on 10 and for private institutions on page 11. For both types of control, four-year colleges and universities became more selective in their admissions between 1986 and 2001.

- In public institutions, there was little change in highly selective (+1) institutions. But there were large gains in selective (+33) and traditional (+71) admissions, and large losses in liberal (-15) and open (-38) admissions institutions.
- Among private colleges and

Four-Year Colleges and Universities by Control and Admissions Selectivity 1986 to 2001

Year	Highly Selective	Selective	Traditional	Liberal	Open	Total
Public Institutions						
2001	30	114	213	63	37	457
2000	29	119	212	59	39	458
1999	28	120	199	62	45	454
1998	28	121	184	66	43	442
1997	28	130	179	70	43	450
1996	30	124	181	67	46	448
1995	29	120	179	61	45	434
1994	29	113	168	63	49	422
1993	28	111	163	66	49	417
1992	30	104	158	64	56	412
1991	29	99	157	71	60	416
1990	31	94	159	71	59	414
1989	27	94	159	73	61	414
1988	27	90	158	75	67	417
1987	28	88	146	80	71	413
1986	29	81	142	78	75	405
Private Institutions						
2001	100	264	413	155	63	995
2000	95	278	400	162	64	999
1999	93	275	406	159	64	997
1998	94	271	409	155	66	995
1997	91	271	415	164	65	1006
1996	89	264	406	166	70	995
1995	88	265	401	169	71	994
1994	88	257	403	172	76	996
1993	85	258	403	178	69	993
1992	86	250	406	183	72	997
1991	84	247	408	186	79	1004
1990	82	240	409	180	93	1004
1989	83	234	403	186	96	1002
1988	79	232	406	191	96	1004
1987	79	223	418	193	101	1010
1986	77	221	418	211	85	1012

Source: ACT National Dropout and Graduation Rates Report, annual.

universities, there were large gains in the numbers of highly selective (+23) and selective (+43) institutions, and losses among traditional (-5), liberal (-56) and open (-22) admissions institutions.

The above shifts also occurred in institutions classified by highest degree offered between 1986 and 2001. But here the issue of increasing admissions selectivity is confounded by the "mission creep" of institutions. For example, at institutions where the highest degree offered is the bachelor's degree, the shifts in admissions selectivity are largely masked by the reduction in the number of institutions by 152 during this period. Similarly the number of institutions where the highest degree offered is the master's degree increased by 89 between 1986 and 2001, thus distorting the apparent redistribution in admissions selectivity during this period.

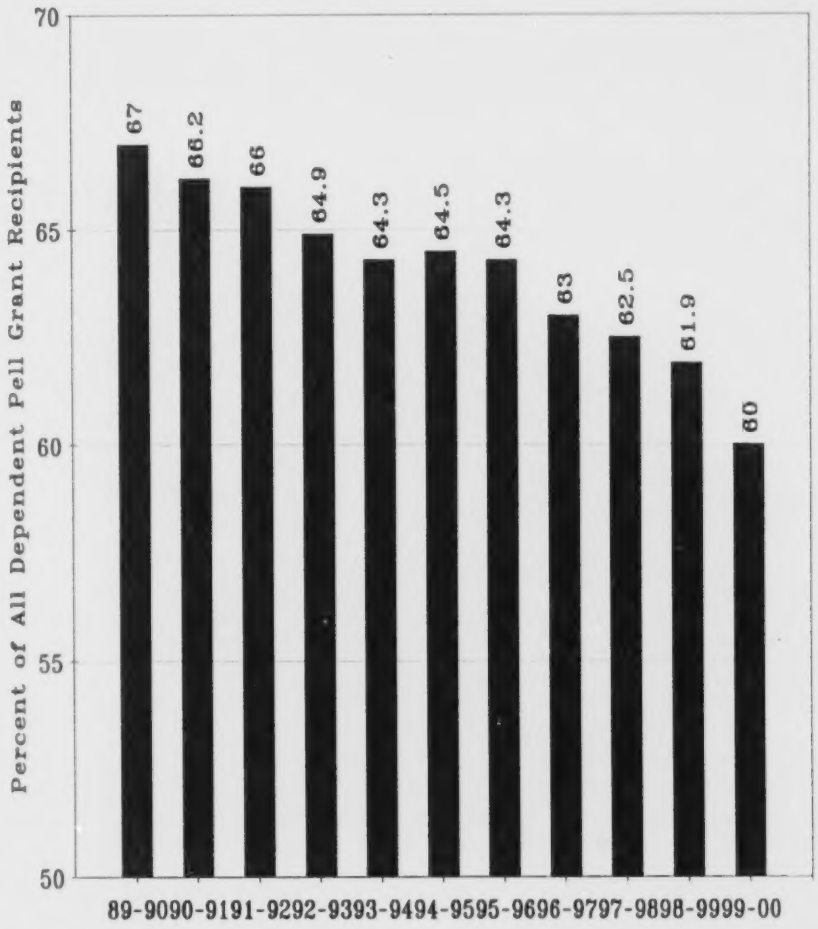
For those interested in the distribution of admissions selectivity and highest degree offered between 1986 and 2001, we offer those charts in the .pdf version of this report available on our website.

Low Income Enrollment Shifts

If our hypothesis that increasing admissions selectivity between 1986 and 2001 is squeezing students from low income backgrounds out of public and private four year colleges and universities is true, then we ought to be able to demonstrate the enrollment consequences in some way.

In fact we can, and the enrollment data do support our hypothesis. Here we examine the distribution and redistribution of students among higher education institutions over time using Pell Grant recipient data compiled by the U.S. Department of Education. Pell Grant recipients by definition come from low to moderate family income backgrounds because these are the populations targeted by Title IV of the Higher Education Act of 1965.

Dependent Pell Grant Recipients Enrolled at Public and Private 4-Year Colleges and Universities 1989-90 to 1999-00



The Pell Grant program recipient data are published in annual program reports by the U.S. Department of Education after the conclusion of each award year. These reports are published in paper form. We obtain our copies from Steve Carter at 202/502-7822. Copies are also available for downloading from the Department of Education's website at:

http://www.ed.gov/offices/OPE/Data/index.html

The above chart shows the proportion of total number of dependent Pell Grant recipients that have been received by students enrolled in public and private four-year colleges and universities between 1989-90 and 1999-00. During this period the proportion has shrunk from 67.0 percent in 1989-90 to 60.0 percent by 1999-00. The remaining Pell Grant recipients have been enrolled in public 2-year, private 2-year and proprietary institutions, or institutions that usually practice open-door admissions and appear to be increasingly welcoming to students from low and moderate

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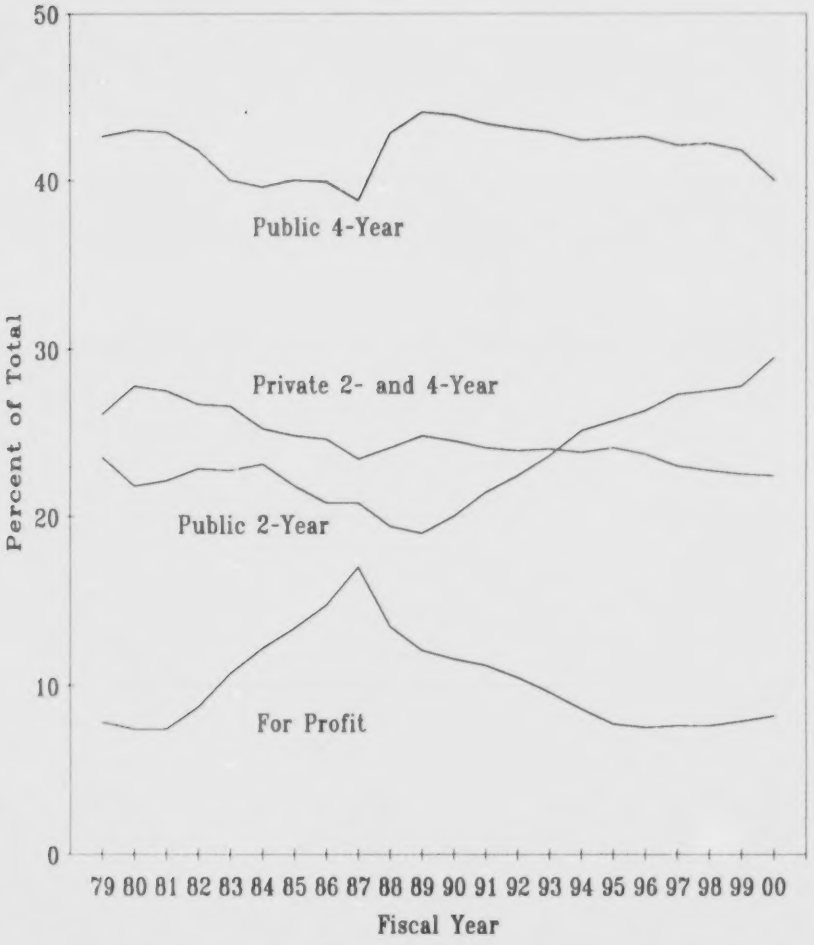
Distribution of Dependent Pell Grant Recipients by Institutional Type and Control FY1979 to FY2000



family income backgrounds compared to four year institutions.

The chart above shows the distribution of dependent Pell Grant recipients across institutional types and controls between 1978-79 and 1999-00. The chart on the next page shows the distribution for independent Pell Grant recipients across institutions and years.

These data are distorted by the bulge in Pell Grant recipients enrolled in proprietary institutions between 1981 and 1995, peaking in 1987. During the period between 1981 and 1987 the federal government lapsed control of institutional eligibility for the Pell Grant program. Crooks and thieves poured into the program and proprietary participation blossomed like weeds peaking in 1986-87. Thereafter the fraud and abuse was gradually brought back under federal control.

However, in both charts the growth in the share of Pell grants received by students in community colleges since the late 1980s is readily apparent. And in both charts the share of Pell Grants received by students in public 4-year and private institutions has declined slightly.

Among dependent Pell Grant recipients, between FY1989 and FY2000:

- The proportion of dependent Pell Grant recipients attending public 4-year institutions declined from a peak of 44.1 percent in FY1989 to 40.0 percent, or by 4.1 percent.
- The proportion of dependent Pell Grant recipients attending private 4-year and 2-year colleges declined from 24.8 to 22.4 percent, or by 2.4 percent.
- The proportion of dependent Pell Grant recipients attending public 2-year colleges increased from 19.0 to 29.5 percent or by 10.5 percent.

Clearly, enrollment of dependent students from low income families shifted from public 4-year and private 4-year and 2-year institutions to public 2-year colleges during this eleven year period.

Among independent Pell Grant recipients, between FY1989 and FY2000:

- The proportion of independent Pell Grant recipients attending public 4-year institutions increased from 24.8 to 26.6 percent, or by 1.8 percent.
- The proportion of independent Pell Grant recipients attending private institutions declined from 13.9 to 13.8 percent.
- The proportion of independent Pell Grant recipients attending public 2-year colleges increased from 29.9 to 41.8 percent, or by 11.9 percent.

Here the growth was in public institutions, at the expense of proprietary institutions, during this ten-year period.

It appears that the institutions practicing selective admissions have lost shares of Pell Grant recipients--both dependent and independents--and that the share received by community college students has grown over the

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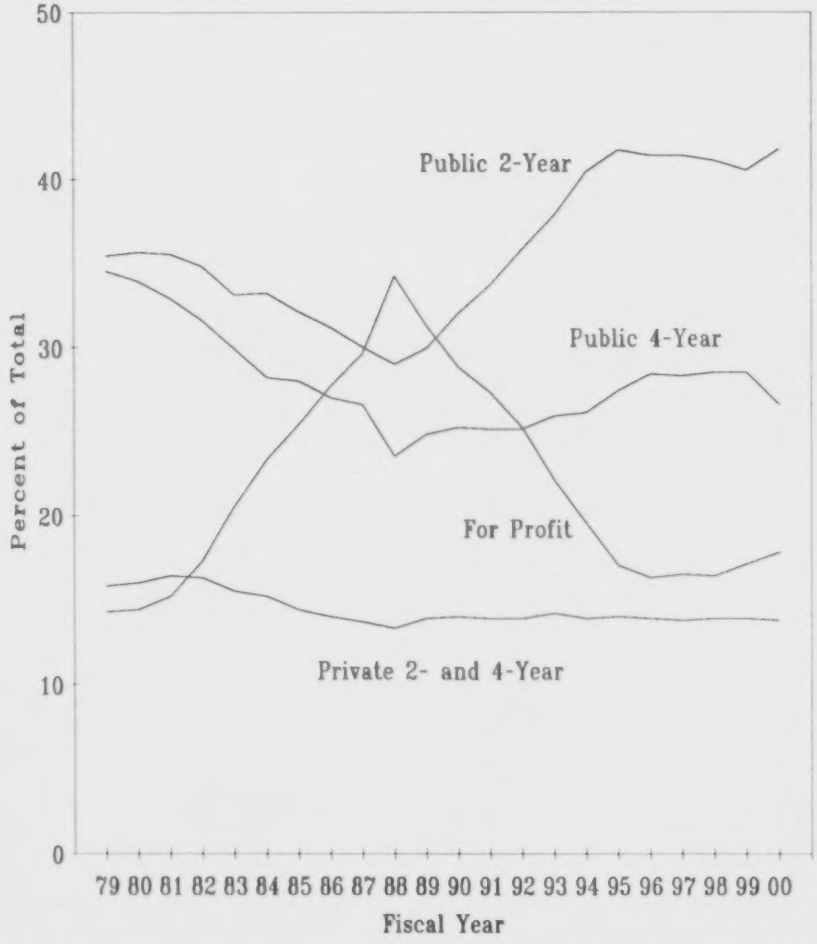
last decade or so.

The Twin Challenges of Opportunity

The analysis reported here has shown that both public and private 4-year colleges and universities have become substantially more selective in their freshmen admissions over the last 15 years. As a direct result, these institutions are enrolling a declining share of the students from low and moderate family income backgrounds that have enrolled somewhere in higher education. These students have become increasingly concentrated in community colleges since the late 1980s.

Since the early 1970s the human capital economy has been evolving in the U.S. This economy requires more and better educated workers. It has sent an unequivocally clear message: only those with college educations are succeeding in the labor market. In fact the labor market has become under-supplied with college-educated workers, and over-supplied with workers who have a high school education or less. The challenge to public policy makers and institutions has been to substantially broaden opportunities for postsecondary education and training to a larger share of the population for the last three decades.

Distribution of Independent Pell Grant Recipients
by Institutional Type and Control
FY1979 to FY2000



At the same time, the demography of the college age population has been changing in ways that pose special challenges to delivering more college education. A growing share of children are coming to college-age with far lower family incomes to finance their higher educations than higher education has served well in the past. These groups--minorities, first-generation, low social class, immigrants--look quite different from the relatively affluent European whites that have dominated higher education enrollments in the past. These whites represent a steadily and substantially shrinking share of the market population for higher education enrollment and the future workforce.

So what has been the response to these twin challenges of growing human capital and changing demographics? Mostly the responses have been the wrong ones from the federal government, from state governments and from four-year institutions.

Federal response. From Washington, DC, we learn that it is now federal policy to provide Hope and Lifetime Learning tax credits and other tax credits to everyone except those too poor to pay federal income taxes. No needs test for these tax credits. Just a political test of who complains and votes.

This is the culmination of a process that began in 1978 with the Middle Income Student Assistance Act when the federal focus on the poor began to move up the income scale. In the early 1980s Pell Grant maximum awards to the poor were reduced to protect middle income eligibility. In 1986 the largest Pell Grant increases went to middle income students and

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the smallest to the poorest. In 1992 home equity was removed from federal need analysis, benefitting those with the most home equity but providing nothing for the poor. Throughout this period the purchasing power of the Pell Grant maximum award declined by about half.

State response. Up through FY1994, state students financial aid programs were clearly focused on meeting the demonstrated financial needs of students. Between FY1982 and FY1994 about 90 percent of all state student financial aid was in the form of need-based grants. Then Georgia's HOPE Scholarship program came on line, and the state focus on need began to shift from need to merit. These merit scholarships tend to fund college enrollment likely to occur anyway, and are thus inefficient in fostering higher educational opportunity.

Georgia's program is especially unjust because it is financed by lottery profits provided disproportionately by the poor. By FY2000 the proportion of state financial aid dollars awarded on the basis of need had plummeted to 78 percent and is certain to decline further as more state merit scholarship programs come on line.

Institutional response. Public and private four-year colleges and universities are shifting their interests and resources away from addressing the challenges of educating students from low and moderate family income backgrounds--those from the bottom half of the income distribution. These institutions are both raising their admissions selectivity and shifting institutional financial aid away from need and toward merit--from low income to higher income students.

Instead there is growing institutional interest in serving students that are easiest to teach, that are the least costly to enroll, that cost the institution least in financial aid and in fact require no financial aid, that look most like the faculty, that improve the institution's ranking in U.S. News and World Report, etc. It is an ego self-serving, socially irresponsible policy course for public and private 4-year colleges and universities to pursue.

The bottom line facts are that we are well into a human capital economy that requires more college-educated workers, and that demographic changes are bringing new students with challenging needs that neither federal, state nor institutional policy makers are addressing.

We ignore these contradictions at our own social and economic peril.

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Freshman-to-Sophomore Persistence
1983 to 2001

To graduate from college, students must apply and be accepted, enroll and continue their studies through completion. The transition from the freshman to the sophomore year of college is one of the key transition points along this path. About a quarter of those who begin their studies at a four-year college do not return for the second year. Nearly half of those who start their studies at a two year college do not return for their second year.

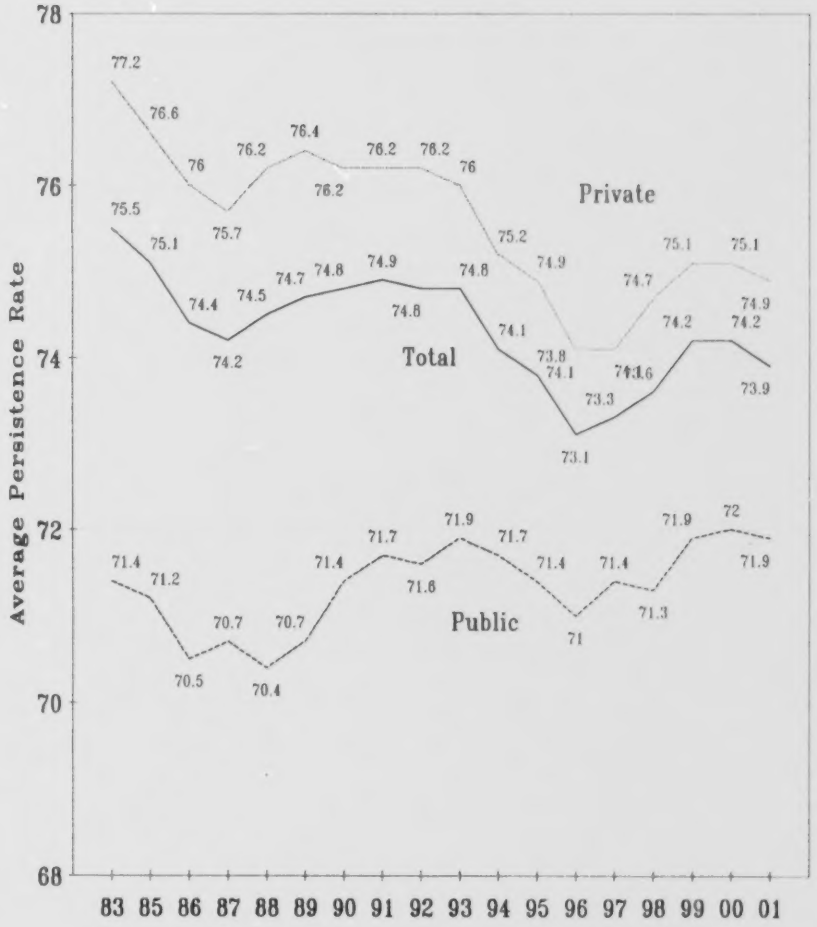
Here we analyze data recently reported by ACT in their annual *National Dropout and Graduation Rates Report*. This tabulation is based on data reported by about 2500 public and private colleges and universities. This report has published data collected since 1983 in a similar format. It thus offers unique insight into institutionally-collected data on dropout experience between the freshman and sophomore years.

Because our interest is in the more positive student persistence measure, we have reported ACT's data as freshmen-to-sophomore persistence. This is simply 100 minus ACT's reported dropout rate.

Over the time span between 1983 and 2001, freshman-to-sophomore persistence has declined in both two-year and four-year institutions.

- In four-year colleges and universities the persistence rate has declined slightly from 75.5 percent in 1983 to 73.9 percent in 2001. This rate had reached a bottom of 73.1 percent in 1996.
- In two-year colleges the persistence rate declined from a high of 56.8 percent in 1983 to a low of 54.1 percent in 2001.

Freshman-to-Sophomore Persistence Rates
at Public and Private 4-Year Institutions
1983 to 2001



Private colleges and universities tend

to have higher student persistence rates than do public institutions.

- In 2001 in four-year institutions, the persistence rate in private institutions was 74.9 percent compared to 71.9 percent in public institutions.
- In two-year institutions the persistence rate in the privates was 66.9 percent compared to 51.5 percent in public institutions.

These differences between private and public institution persistence rates have narrowed slightly between 1983 and 2001.

- In four-year institutions, the private advantage over public narrowed from 5.8 percent in 1983 to 3.0 percent by 2001.
- In two-year colleges, the gap was 16.0 percent in 1983. In 2001 it was 15.4 percent.

But by far the most important finding in the ACT-reported data is the relationship between admissions selectivity and persistence rates. In 2001 in four-year colleges and universities average persistence rates ranged from 91.6 percent in highly selective institutions to 60.6 percent in open admissions institutions.

Also, the variance about these mean values suggests some institutions do a better job helping students to persist than do other institutions.

These and many other findings are gleaned from our analysis of the ACT-tabulated data reported by institutions.

The Data

There are many current efforts to define, collect and report data on freshman-to-sophomore persistence and graduation rates by institution. These efforts are led by U.S. News and other college-guide publishers, the National Center for Education Statistics, and the Consortium for Student Retention Data Exchange at the University of Oklahoma.

None of these, however, go back to 1983. ACT did it first and ACT got it mostly right from the beginning. ACT reports average institutional dropout rates and their standard deviations by institutional control, highest degree offered and, most important, by admissions selectivity.

These data are compiled by ACT from data reported by institutions in its annual Institutional Data Questionnaire (IDQ). Two questions are key. The first question asks: "Freshman class: % of last year's first time/full time freshman class who enrolled this fall." Prior to the 1998 this question did not specify "first time/full time" and presumably included all entering freshmen in the denominator.

The second key question on the ACT IDQ concerns admissions selectivity. This is key. The question reads:

Check the category which best describes to prospective students your freshman admissions policy (as applied to in-state or in-supporting-area students).

1. ***Highly selective*** *(majority of accepted freshmen in top 10% of high school graduating class)*
2. ***Selective*** *(majority of accepted freshmen in top 25% of high school graduating class)*
3. ***Traditional*** *(majority of accepted freshmen in top 50% of high school graduating class)*
4. ***Liberal*** *(some freshmen from lower half of high school graduating class)*
5. ***Open*** *(all high school graduates accepted, to limit of capacity)*

ACT provides quantitative guidance for interpretation of the admissions

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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categories by providing typical ACT and SAT test score ranges as follows:

Selectivity Level	Typical Test Scores ACT	SAT
Highly Sel	27-31	1220-1380
Selective	22-27	1030-1220
Traditional	20-23	950-1070
Liberal	18-21	870-990
Open	17-20	830-950

These admissions selectivity categories are used in tabulation along with institutional control and highest degree offered to report mean and standard deviations for institutional dropout rates between the freshmen and sophomore years of college.

The 2001 ACT dropout and graduation rate report is available on request from Dr. Wes Habley at ACT. Wes may be reached at ACT at habley@act.org.

OPPORTUNITY has compiled all of the data from the ACT National Dropout and Graduation Rate reports from 1983 through 2001. These reports are compiled in two large Excel workbooks available for viewing on our website:

http://www.postsecondary.org

Look under the Spreadsheets button.

Persistence Rates

As shown in the chart on page 1 of this issue of OPPORTUNITY, for 2001 the freshman-to-sophomore persistence rate at four-year colleges and universities averaged 73.9 percent. These freshmen began their studies in the fall of 1999 at a participating institution, were enrolled in the fall of 2000 and are reported in ACT's 2001 report.

As shown in the chart on this page, the average institutional persistence rate at two-year colleges was 54.1 percent in 2001.

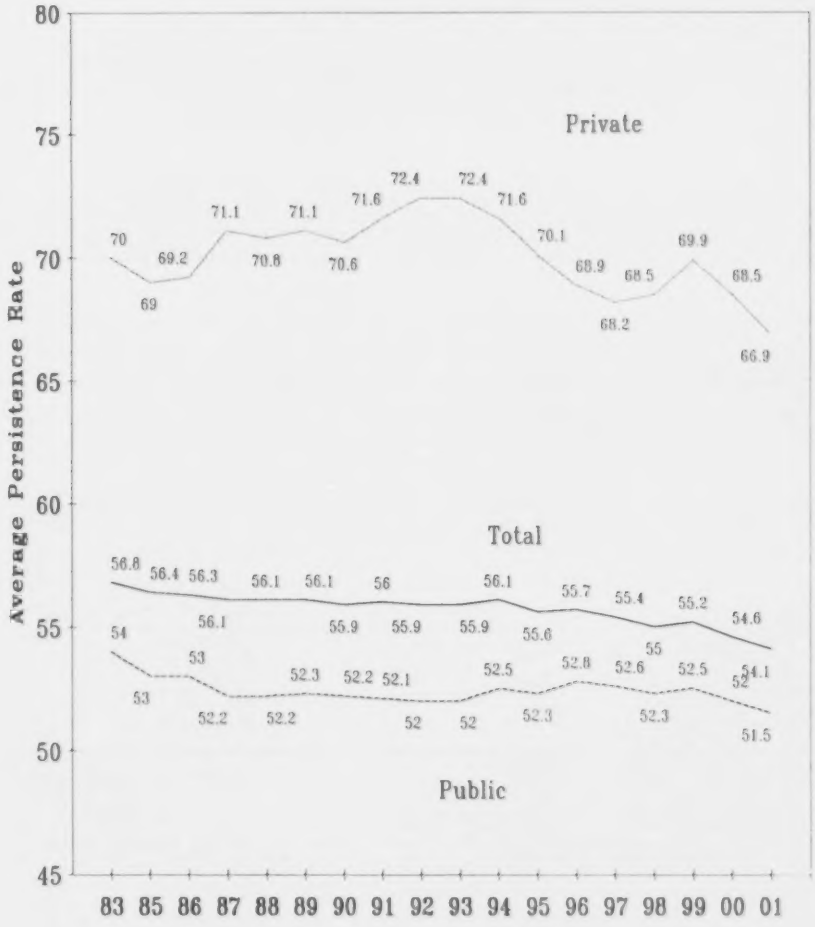
Trends. The national persistence rate at four-year institutions has fluctuated between a high of 75.5 percent in 1983 to a low of 73.1 percent in 1996. While the overall trend is down slightly over this 18 year period, the persistence rate has increased slightly since its nadir in 1996.

In two-year colleges the persistence rate has also declined, from its zenith at 56.8 percent in 1993 to its low point of 54.1 percent in 2001. Most of this decline has occurred between 1994 and 2001.

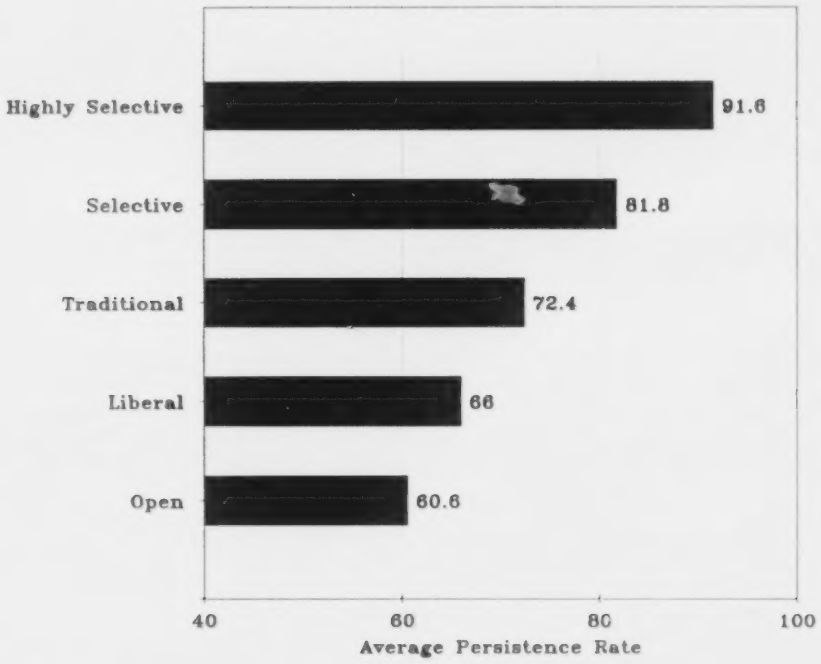
Institutional control. In both two-year and four-year colleges and universities, private institutions achieve higher persistence rates than do public institutions. In 2001 in four-year institutions, the average persistence rate in privates was 74.9 percent, compared to 71.9 percent in the publics. In two-year institutions, the average persistence rate in the privates was 66.9 percent compared to 51.5 percent in public institutions.

Over the 18 years of ACT's reported data, the gap between privates and publics has closed. The mean persistence rate at private four-year

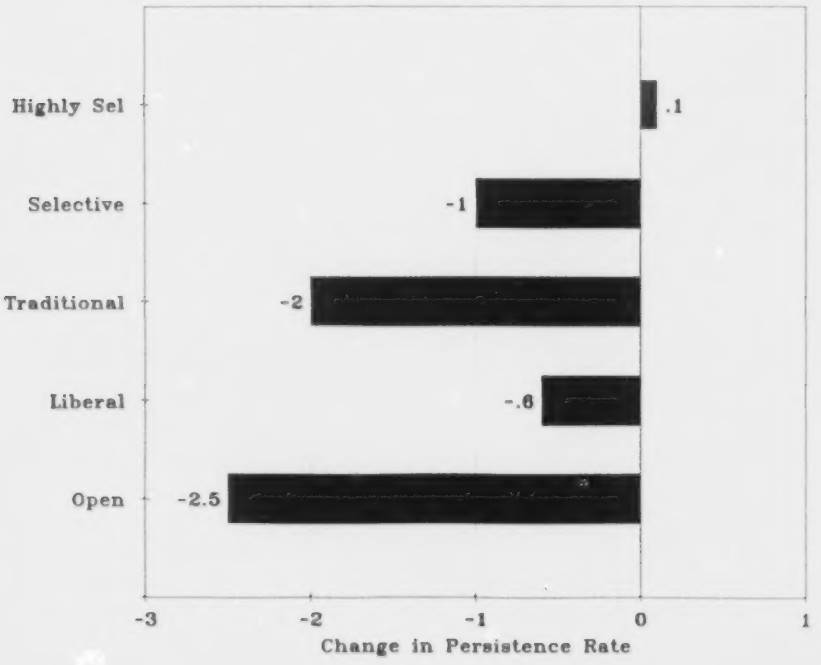
Freshman-to-Sophomore Persistence Rates at Public and Private 2-Year Institutions 1983 to 2001



Freshman-to-Sophomore Persistence Rates
by Admissions Selectivity at 4-Year Institutions
2001



Change in Freshman-to-Sophomore Persistence Rates
by Admissions Selectivity
1991 to 2001



institutions declined by 2.3 percent, while it increased by 0.5 percent at publics during this same period. Between 1983 and 2001 the gap closed from 5.8 to 3.0 percent.

In two-year colleges the gap has been much wider, but here too it has narrowed. The persistence rate in private two-year colleges declined by 3.1 percent, and by 2.5 percent in publics.

Admissions Selectivity

Research has repeatedly shown that students with stronger academic credentials are more successful in college than are students with weaker academic credentials. These academic credentials may include high school grades, high school class rank, standardized test scores and specifically college admissions test scores like the ACT and the SAT. In fact these measures tend to be highly correlated with each other. Some may be better measures and predictors than are others, but they all tend to measure ability and preparation.

Thus, it is only logical that institutions that enroll students with stronger academic records should be expected to have greater student persistence rates. In fact we find this to be true in the ACT data, albeit with interesting variations.

The chart on this page shows average institutional persistence rates in four-year colleges and universities by their self-reported admissions selectivity in ACT's 2001 report.

- Among the 126 highly selective institutions, the average institutional persistence rate was 91.6 percent. These are the institutions that admit more than half of their freshmen who graduated in the top 10 percent of their high school classes.
- Among the 400 selective four-year institutions, the average

institutional persistence rate was 81.8 percent. These institutions admit more than half of their freshmen from the top quarter of their high school graduating classes.

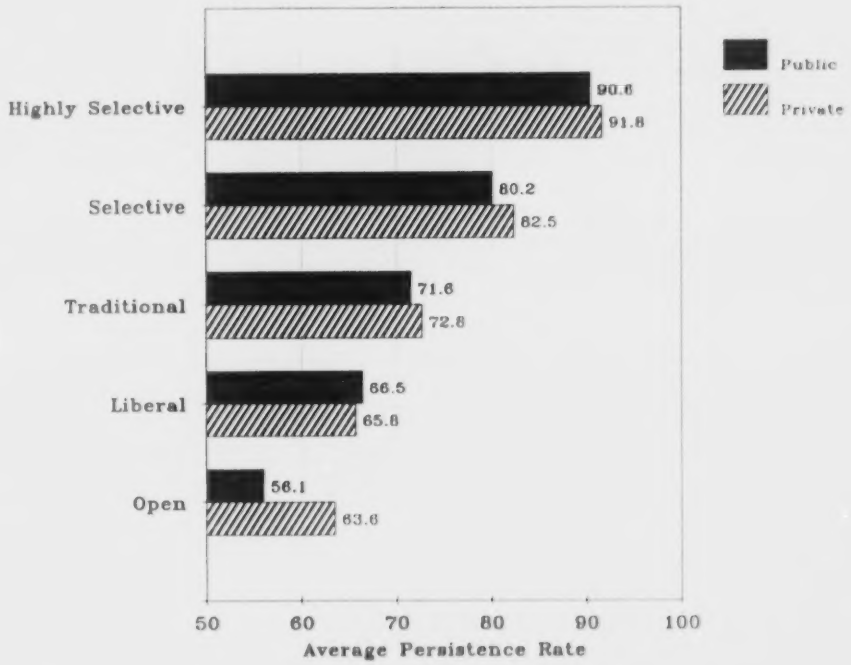
- Among the 685 traditional admissions institutions, the average institutional persistence rate was 72.4 percent. These institutions admit more than half of their freshmen from the top half of their high school graduating classes.
- Among the 277 liberal admissions four-year institutions, the mean institutional persistence rate was 66.0 percent. These institutions admit some freshmen from the lower half of their high school classes.
- Among the 152 open admissions four-year institutions, the average institutional persistence rate was 60.6 percent. These institutions admit anyone.

Trends. Because of the long time-series of similarly defined data in the ACT reports, trend analysis is relatively straightforward. Here we have chosen the last decade for comparison.

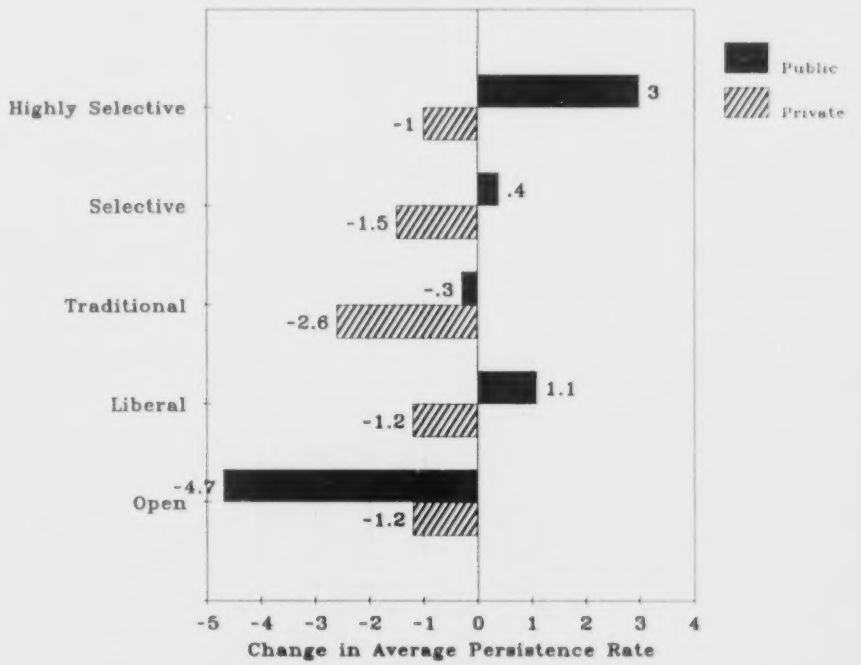
Overall, the four-year institutional persistence rate declined from 74.9 to 73.9 percent between 1991 and 2001. However, controlling for admissions selectivity, the decline was greatest among the least selective institutions, and actually increased slightly among the highly selective institutions. These data are shown in the chart on the previous page.

Institutional control. The charts on this page disaggregate the previous data for four-year institutions to public and private institutional control. At four of the five levels of admissions selectivity, private institutions have higher freshman-to-sophomore persistence rates than do public institutions in 2001. At each level of admissions selectivity, however, the

Freshmen-to-Sophomore Persistence Rates by Admissions Selectivity and Control at 4-Year Institutions 2001



Change in Freshman-to-Sophomore Persistence Rates by Admissions Selectivity and Control at 4-Year Institutions 1991 to 2001



difference between privates and publics is usually much less than the 3 percent difference shown in the chart on page 1. Thus it appears that part of the difference between overall private and public institutional persistence rates is attributable to the somewhat greater admissions selectivity of private institutions compared to publics.

The second chart on page 5 shows the changes in persistence rates between 1991 and 2001 in public and private four-year institutions, again controlling for admissions selectivity. In private institutions, persistence rates declined at all levels of selectivity. The decline was greatest at traditional admissions institutions.

In public four-year institutions, the changes were at the extremes. Highly selective public institutions had a 3.0 percent gain in persistence, while open admissions publics saw a 4.7 percent decline in persistence rates.

Parental income. The high degree of positive correlation between academic credentials of students and their family incomes is found throughout the research literature. Students with the strongest academic credentials tend to have the highest average family incomes. Students with the weakest academic credentials tend to report the lowest family incomes. We have shown this in past issues of OPPORTUNITY for high school grades, college preparatory curriculum completion in high school, and ACT scores. Other tests (NAEP) produce similar findings.

Thus, we should expect to find students at the most selective institutions to be representative of the highest income families, and students at the least selective colleges to have much lower family incomes. The published ACT data used here do not measure this link. But the UCLA survey of American college freshmen do provide income data for institutions classified by admissions selectivity. And yes, in fact the UCLA freshman data clearly show this relationship.

The table below shows median estimated parental income for first-time, full-time college freshmen by institutional level, control and academic selectivity. The data for four-year institutions are from the survey of fall 2000 freshmen, and because the two-year data were not collected in 2000 we have used 1999 data for two-year colleges.

Note that in the UCLA survey of college freshmen, the determination of academic selectivity varies by institutional type and control. For the average SAT score ranges for each selectivity level, see pp. 115-116 of the report for fall 2000 freshmen.

For each of the four-year institutions where the freshman survey reported estimated parental income, data have been reported by academic selectivity. These median incomes increase--significantly--with increases in academic selectivity.

In public institutions:

- Median estimated parental income increased in four-year colleges from $41,000 at low selectivity, to $60,000 at medium selectivity, to $69,000 at high selectivity institutions.
- Median income in universities increased from $59,000 at low selectivity universities, to $66,000 at medium selectivity universities, to $79,000 at highly selective universities.

Similar patterns are shown in the data for private four-year colleges and universities as well. In all three control types for four-year colleges--

Median Estimated Parental Income for College Freshmen by Institutional Level, Control and Academic Selectivity 2000

	Academic Selectivity				All
	Low	Medium	High	Very High	
All Two-Year*					$49,680
Public*					$49,680
Private*	-	-	-	-	$49,919
All Baccalaureate	-	-	-	-	$64,424
Four-Year	-	-	-	-	$59,550
Public	$40,753	$60,368	$68,665	-	$57,143
Private	-	-	-	-	$63,345
Nonsectarian	$58,793	$65,625	$71,306	$94,406	$67,831
Catholic	$51,322	$58,000	$78,086	-	$64,859
Other religion	$50,172	$56,444	$71,563	-	$58,205
Black	-	-	-	-	$33,740
Public	-	-	-	-	$30,000
Private	-	-	-	-	$41,468
Universities	-	-	-	-	$72,873
Public	$59,421	$66,242	$79,012	-	$69,255
Private	-	$73,279	$96,667	$109,641	$92,606

Source: *The American Freshman: National Norms for Fall 2000.*
* Two-year college data are from 1999 report.

nonsectarian, Catholic and other religion--median parental incomes increase with academic selectivity.

The medians are particularly striking for private universities because they are so high. Even at low selectivity private universities median income was $73,000. This increased to $97,000 at medium selectivity, and to $110,000 at high selective private universities in 2000.

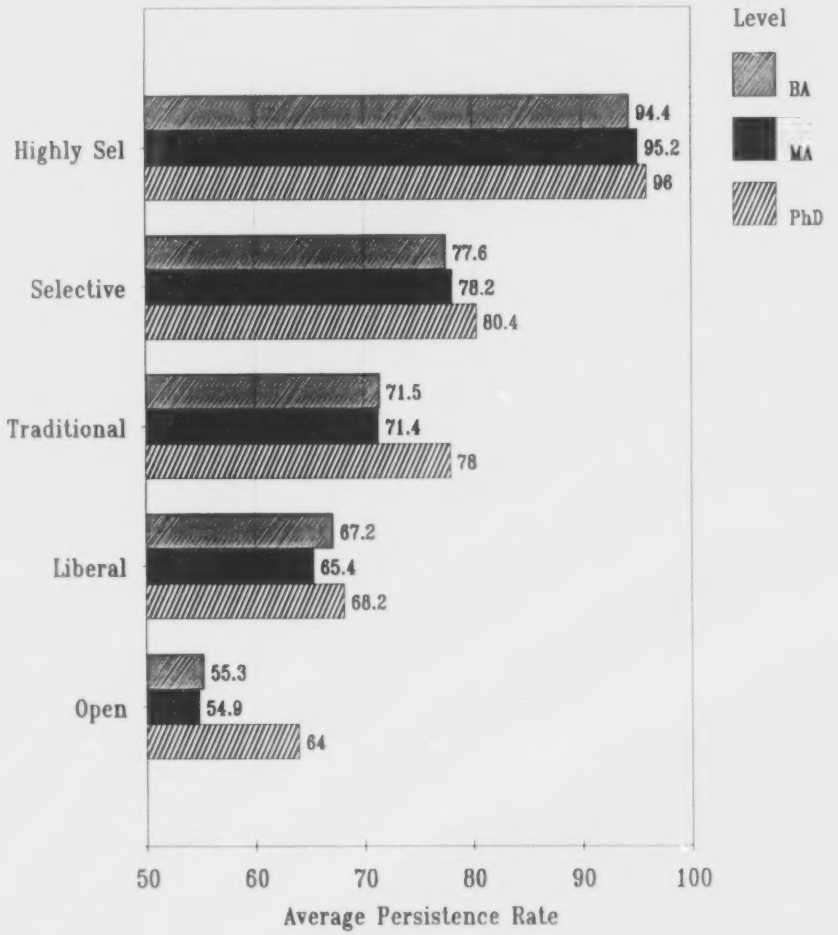
Level, control and selectivity. The two charts on this page show persistence rates at public and private four-year institutions controlling for both admissions selectivity and highest degree offered.

In public four-year institutions, persistence rates are clearly related to admissions selectivity at each level of highest degree offered. Also, persistence rates are similar at each level of highest degree offered and admissions selectivity. However, persistence rates are consistently slightly higher at each level of selectivity compared to rates for institutions where the highest degree offered is either the bachelor's or master's degrees.

Roughly similar patterns hold in private four-year institutions. Persistence rates are consistently related to selectivity controlling for highest degree offered. Also, in most cases, average persistence rates are similar across institutional levels at each level of admissions selectivity. Private universities have higher persistence rates than other private institutions only at selective and traditional admissions institutions.

Standard deviation. All of the data on persistence rates reported here so far are average values for cells of institutions. These means have standard deviations reported by ACT in their report. These standard deviations reflect differences in

Freshman-to-Sophomore Persistence Rates at Public 4-Year Institutions by Level and Selectivity 2001

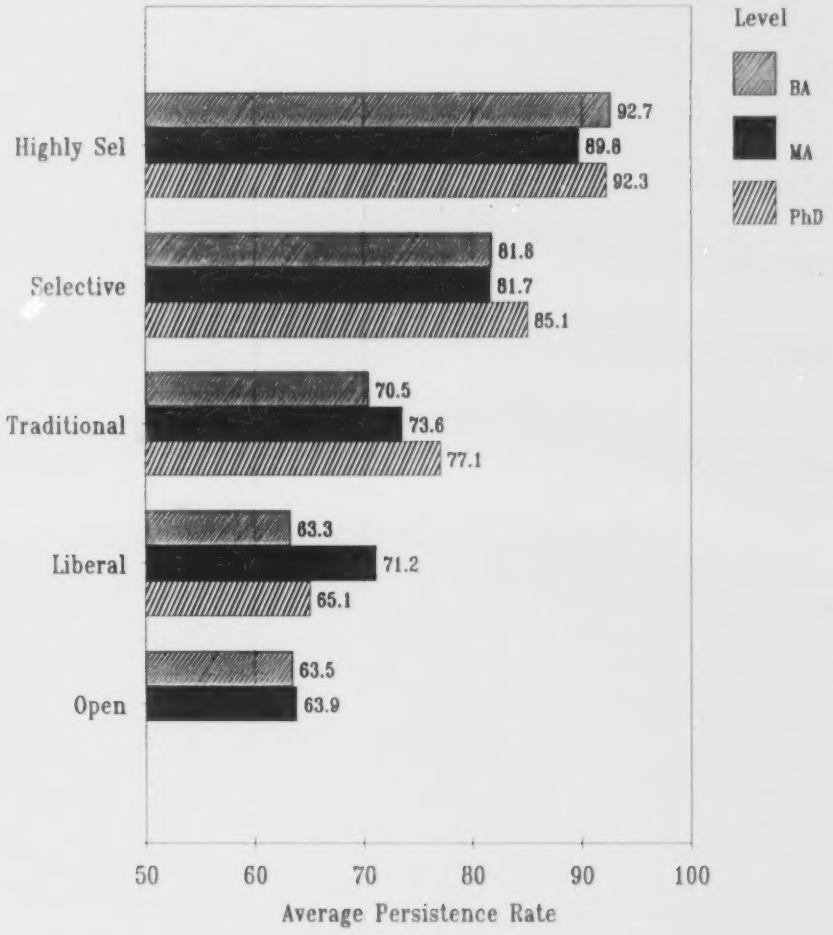


persistence rates among institutions that are otherwise similar in control, highest degree offered and admissions selectivity.

These differences in persistence rates among otherwise similar institutions are very important. The differences indicate that students are more successful as measured by freshman-to-sophomore persistence at some institutions than they are at others. Or, expressed another way, some institutions do a better job of keeping their students enrolled between the freshman and sophomore years of college than do other institutions.

Here is how the standard deviation measures variability within a given group of institutions. There are 105 public institutions where the highest degree offered is the master's degree and that practice traditional admissions. Their average persistence rate is 71.4 percent. The standard deviation of this mean is 7.3 percent. This means that two-thirds of these 105 institutions reported institutional persistence rates between 64.1 and 78.7 percent. One-sixth of the total reported institutional persistence rates

Freshman-to-Sophomore Persistence Rates at Private 4-Year Institutions by Level and Selectivity 2001



below 64.1 percent, and the remaining sixth reported persistence rates above 78.7 percent.

Here is another example. There are 93 private colleges that offer only the bachelor's degree and practice selective admissions. Their mean persistence rate is 81.8 percent. The standard deviation of this mean is 7.5 percent. So two-thirds of these 93 colleges have reported institutional persistence rates of between 74.3 and 89.3 percent. One-sixth report persistence rates below 74.3 percent and the remaining sixth have reported rates above 89.3 percent.

Generally, the standard deviations of the mean persistence rates in each group of institutions grouped by control, level and selectivity increase as persistence rates decrease. That is, the variability in persistence within each group is greater when persistence rates are lower, and this variability is less where persistence rates are higher.

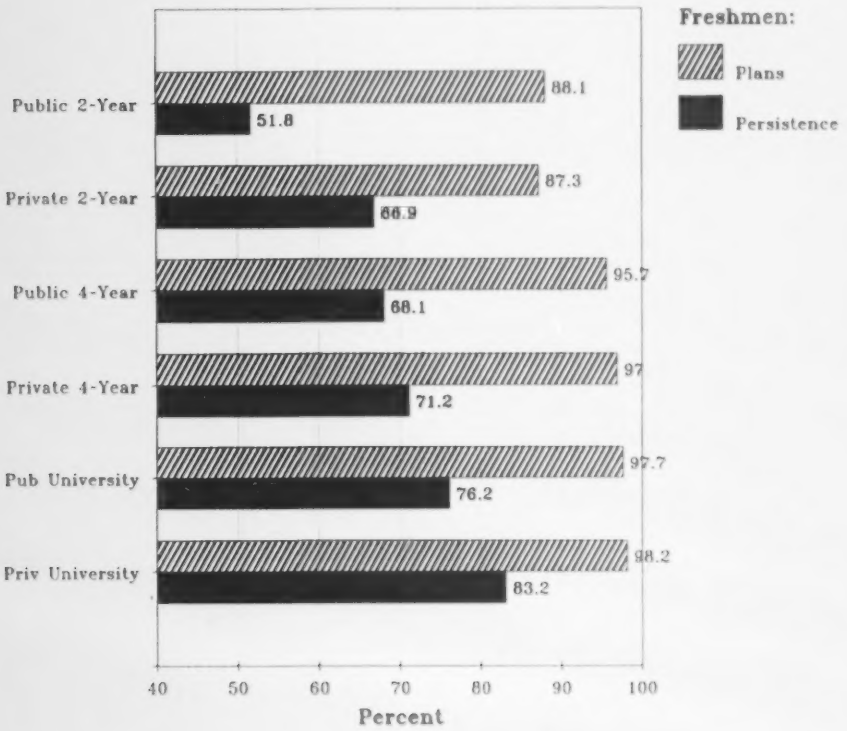
The obvious meaning to this variability in persistence rates among otherwise similar institutions is that students are more successful persisting at some institutions than they are at others. Or, some institutions provide more supportive environments for student persistence than do others.

Research on the environmental factors that influence student persistence focus on academic and social influences, particularly those that integrate students into the academic and social lives of the college community. Students are more academically successful when they are integrated than when they are alienated. These supportive environments may be created in what are often called learning communities. Expert advice is available to institutions through consultants that advise on these services.

OPPORTUNITY has conducted its own study of persistence rates at 1063 four-year colleges and universities. This study was reported in the June 1997 issue (#60), which is available for downloading from our website (under Archives). Our model found that over half of the variance in institutional persistence rates was explained by the mean SAT score for the entering freshman. Slight additions to the explanatory power of our model came from the percent of undergraduates that were enrolled part-time on the campus, the percent of freshmen living on-campus, and whether the college was Catholic or not.

From this model we calculated predicted persistence rates for each of the 1063 institutions in our study. We then ranked these institutions by the difference between their actual and predicted persistence rates. This approach provides reasonably clear indication of which institutions do a better than expected job of retaining their freshmen students through to their sophomore year, and which institutions do a worse than expected job of retaining their freshmen.

Degree Planned at This Institution is 2 Years or More
Compared to Frosh-to-Soph Persistence Rate
by Institutional Level and Control
Fall 1999 First-Time/Full-Time Freshmen



We intend to update and extend this study when the data become available to do so.

Plans versus Persistence

The freshman-to-sophomore persistence rates data reported for institutions by ACT can be usefully compared to the plans of freshmen for highest degree planned from the UCLA survey of American college freshmen. Here the data are all for first-time, full-time freshmen beginning their studies in fall of 1999 by institutional control and level.

The gaps are always large between plans and persistence, as shown in the chart on this page. For example, in public two-year colleges, 88.1 percent of first-time, full-time freshmen report that they plan to complete a higher education degree program lasting two years or longer at this institution. But only 51.8 percent of the first-time, full-time freshmen at public two-year colleges make it to the second year of enrollment at the same college.

From these data we can calculate a persistence efficiency rate by simply dividing the persistence rate by the proportion of freshmen planning two years or more of study at the same institution. The results are:

Public two-year	58.8%
Private two-year	76.6%
Public four-year	71.2%
Private four-year	73.4%
Public university	78.0%
Private university	84.7%

In one sense, this is a refined measure of student persistence rates because it excludes those who do not have degree ambitions of two-years or more at the institution where they start their enrollments.

Considerations

Our Canadian colleagues tell us that they do not calculate a freshman-to-sophomore persistence rate as we have used here. Canadians consider the freshmen year experimental and too turbulent to bother measuring. Instead Canadian institutions calculate a "persistence rate" that is the ratio of the number of sophomores at an institution to the number of graduates four years later. Perhaps we should too.

But in the United States we monitor transitions in more detail, at strategic points in the education pipeline:

- Grade-to-grade from ninth grade to twelfth grade in public high schools
- Public high school graduation as a proportion of fall term ninth graders four years earlier
- College continuation as the ratio of fall term college freshmen who had graduated in the previous 12 months to that number of high school graduates
- Freshmen-to-sophomore persistence as reported here
- Persistence to graduation as the ratio of bachelor's degrees awarded to the number in that cohort that began college four, five, six or nine years earlier
- Attainment as the proportion of the population in a given cohort that has completed a college degree

These and many other similar rates and ratios provide the analytical detail required to isolate success and failures in the production of education in the United States. This analytical approach is further broken down by state, institution, race. gender, income, and a host of others ways we believe important to making informed policy decisions.

The Higher Education Industry 1977 to 1997

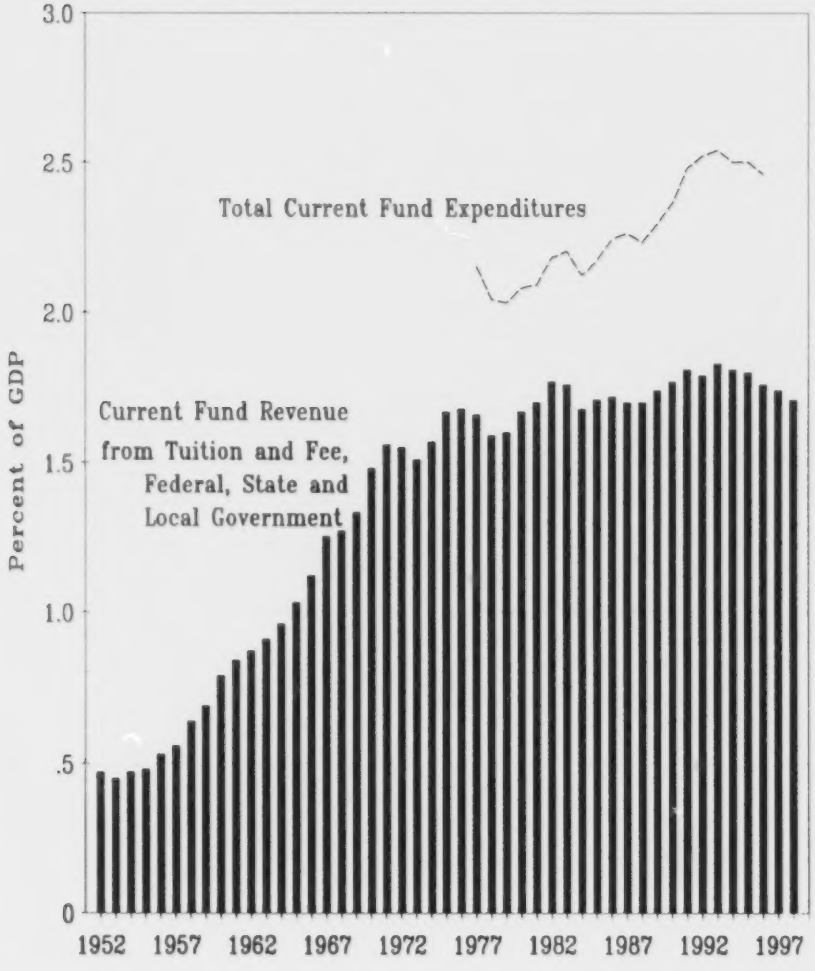
Higher education is an industry. It is a large-scale business activity. It has definable services and products with significant economic value.

Some of the readily definable measures of the higher education industry include:

- *Customers.* In the fall of 1998 there were 14,996,061 students enrolled in higher education. About 9.0 million were enrolled in 4-year institutions, 5.7 million were enrolled in 2-year institutions, and 0.2 million were enrolled in less than 2-year institutions.

- *Businesses.* In the fall of 1998 there were 3913 degree-granting institutions of postsecondary education in the United States. The public total was 1644, and there were 2269 private institutions.

Higher Education's Share of Gross Domestic Product
1962 to 1998



- *Products.* In 1997-98 there were 2,297,733 degrees awarded by higher education institutions. Of this total, 558,555 were associate degrees, 1,184,406 were bachelor's degrees, 430,164 were master's degrees, 78,598 were first-professional degrees, and 46,010 were doctorates.

- *Employees.* There were 2,808,710 staff employed by higher education institutions in 1997. About 1.9 million were professionals and .9 million were non-professionals. Of the professional staff, 1.0 million were faculty and another 0.2 million were faculty assistants.

- *Expenses.* In 1995-96 higher education institutions spent $189,986,000,000. Public institutions spent $119,401,000,000, and private institutions spent $70,585,000,000.

National Income and Product Accounts

In past issues of OPPORTUNITY we have examined the revenue sources of the core mission of the higher education industry at the national level, using data reported in several schedules of the National Income and Product Accounts. These NIPA data are gathered, tabulated and reported by the Bureau of Economic Analysis.

Our most recent analysis of these data was reported in the July 2000 issue of OPPORTUNITY (#97). This analysis for the years between 1952 and 1998 showed:

- Higher education's share of Gross Domestic Product (GDP) increased from less than 0.5 percent of GDP in the mid 1950s, to a peak of 1.83 percent in 1993, then steadily declined for the next five years to

1.71 percent in 1998.

- The shares of higher education's revenues shifted sharply from state and local taxpayers, to students and their families after about 1980.

Gross State Product

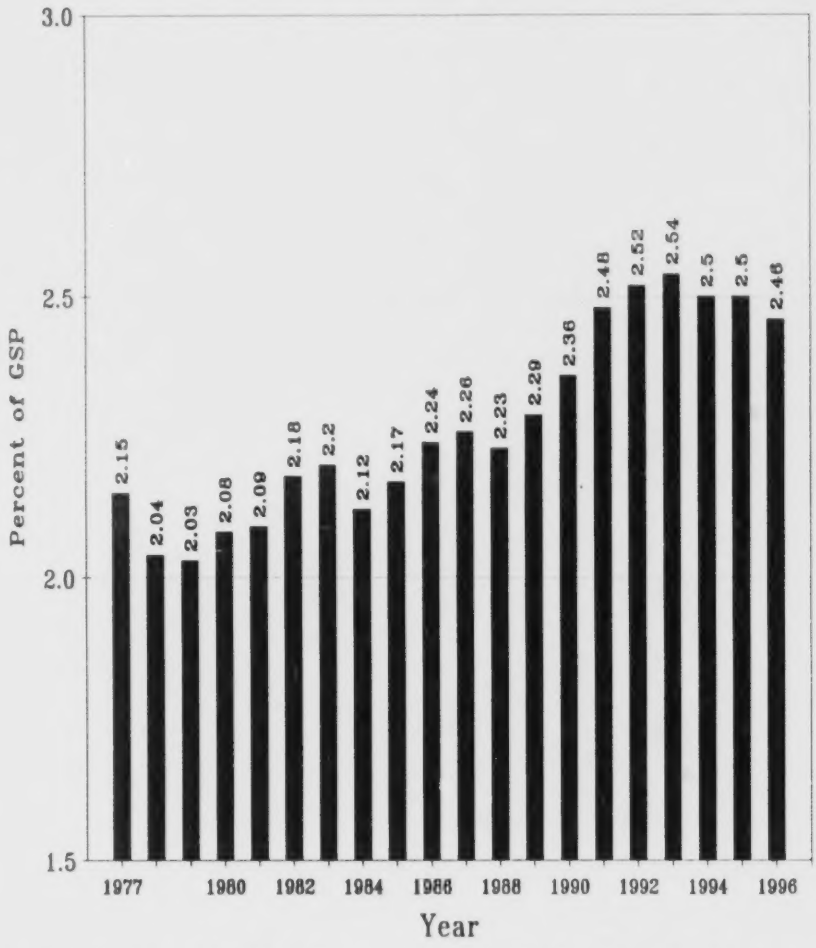
Here we disaggregate the national GDP data describing the higher education industry to the state level. And instead of looking at just the main sources of revenues for higher education, here we use total expenditures of higher education. This more inclusive measure adds all of the various enterprises operated by higher education institutions beyond the core educational missions of institutions.

To no one's surprise, the higher education industry plays a far larger role in some state economies than it does in others. In 1996 higher education expenditures ranged from 5.45 percent of the Gross State Product (GSP) of the **District of Columbia** to 0.94 percent of the GSP of **Nevada.** All other states were arrayed between these extremes.

Some states and regions have a clearer understanding of and appreciation for higher education's role in local and regional economies than is found elsewhere among the states. In particular we think of natural resource-poor but human-capital rich New England. The economic value of higher education to the regional economy is locally recognized and nurtured.

The academic reputations of New England's private and some public colleges and universities attracts students from throughout the United States. These students bring family, private and government resources with them to pay the relatively high institutional charges that New England's colleges and universities are able to command. The New England economy is enriched by this infusion of resources brought from outside of the region. If only leaders in other parts of the country would pay such careful attention to their higher education systems . . .

Higher Education Expenditures Share of Gross State Product 1977 to 1996

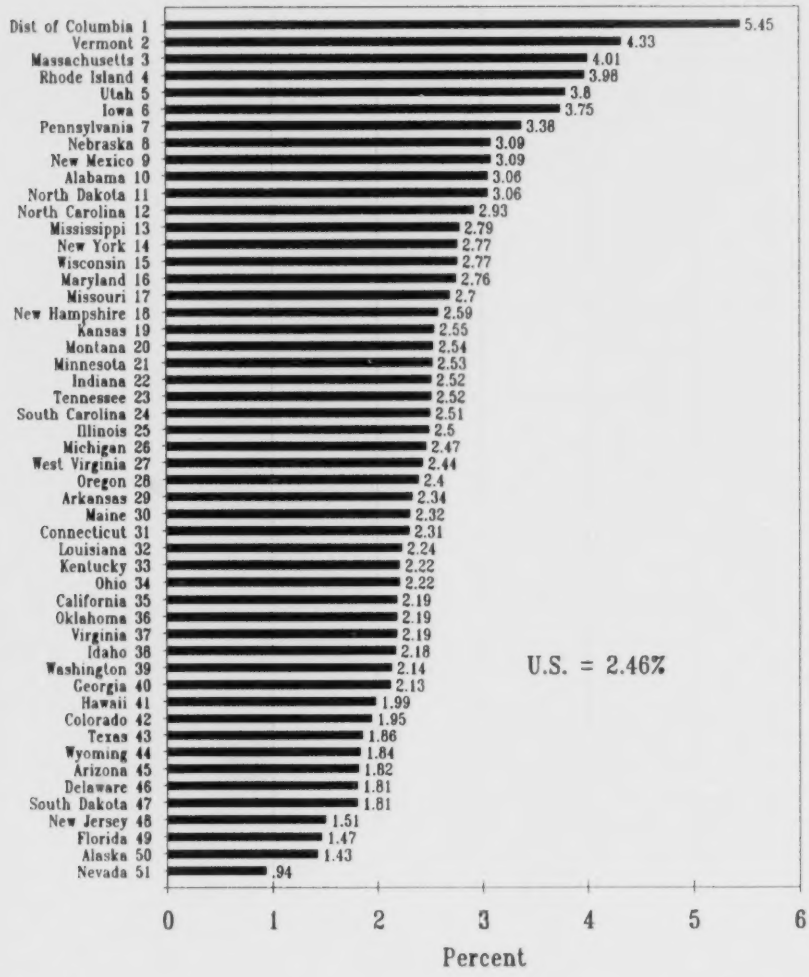


In eight states the private higher education industry plays a larger role in state economies than does public higher education. Of course in the other 43 states public higher education plays the larger share. In 1996 the proportion of higher education expenditures made by private institutions ranged from 96 percent in the **District of Columbia** to zero percent in **Wyoming**.

Between 1977 and 1996 higher education expenditures increased as a proportion of GSP in 44 states, but shrank in the remaining seven states.

These and other findings result from our juxtaposition of two sets of data, one from the Bureau of Economic Analysis and the other from the National Center for Education Statistics. These data describe trends over time and patterns across states about the economic role of the higher

Higher Education Expenditure Share of Gross State Product 1996



education industry.

The Data

The data used in this analysis come from two sources. The first data, on Gross State Product (GSP), is produced from time to time by the Bureau of Economic Analysis. This is a branch within the U.S. Department of Commerce. These data are published in BEA's *Survey of Current Business*, and begins in 1977.

These data were recently revised for the years 1993 through 1998 when 1999 GSP data were added. The data have been posted to the BEA's website.

http://www.bea.doc.gov/bea/regional/gsp/

The second set of data used in this analysis is total current fund expenditures of institutions of higher education. These data are collected by the National Center for Education Statistics in its IPEDS survey. The data are published in various places. These data have appeared in periodic *Ed Tabs*, and in the annual *Digest of Education Statistics*. Both publications are available on the NCES website at:

http://nces.ed.gov

We have compiled these data for each state for the years 1977 through 1997 in a large Excel workbook which is available for viewing on our website at:

http://www.postsecondary.org

on the Spreadsheets page.

Our organization of these data is chosen to illustrate trends and patterns in higher education's share of each state's Gross State Product.

Trends

The chart on page 11 shows the ratio of total current fund expenditures of institutions of higher education to Gross State (or Domestic) Product for the years between 1977 through 1996. (This is FY divided by CY.) Higher education's contribution to GSP rose from about 2.0 percent in the late 1970s to a peak of 2.54 percent in 1993. Since 1993 this ratio has declined to 2.46 percent by 1996.

The chart on page 10 provides a much longer term perspective on higher education's share of total GSP. The time span is 1952 through 1998. In this ratio the numerator of the ratio is expenditures of students and their families for tuition and fees, and the expenditures of federal, state and local government for the educational mission of higher education. This calculation excludes the auxiliary enterprises of higher education (dormitories, book stores, hospitals, etc.).

This longer term perspective illustrates the substantial and rapid growth in higher education's share of GDP that occurred between the early 1950s and about 1980. Just between 1955 and 1971, higher education's share of GDP tripled, from 1/2 percent to 1.5 percent. Between 1971 and 1993 growth continued, but at a much

slower rate.

Very critically, between 1993 and 1998 the total revenues provided by students/parents and taxpayers for the operations of higher education has shrunk as a share of GDP. At a time when higher education is more important than it has ever been to private and social welfare, the combined efforts of the major contributors represents a shrinking share of the economic base of the country.

This finding deserves reflection. From the more detailed analysis of the National Income and Product Accounts that we reported in OPPORTUNITY in July 2000, the state government contribution to public higher education has shrunk markedly since about 1980. While tuition and fees have increased, these increases have fallen short of the appropriations cutbacks. These effects have been most noticeable since 1993. As we will see shortly, this is mainly an issue in public higher education.

Another interpretation of these data is that alternative forms of postsecondary education and training are displacing a tradition-bound higher education system unable to change and adapt as quickly as new economic needs are generated by a rapidly changing economy. Proprietary higher education--University of Phoenix, DeVry, ITT, Strayer and others--appear to be thriving. Perhaps the inertia of traditional higher education has led state leaders to recognize and allow private market forces to provide the higher education that public institutions are slow to respond to. In any case, higher education's share of GDP has been slowly shrinking between 1993 and 1998.

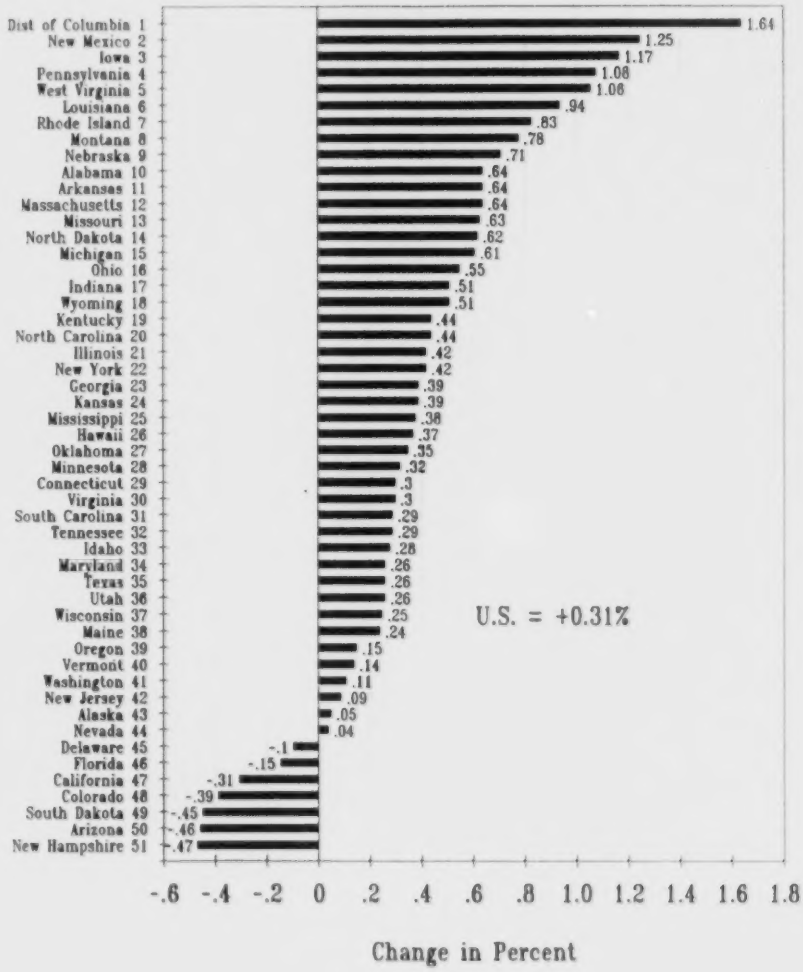
Patterns

The ratio of total current funds expenditures of institutions of higher education to gross state product in 1996 ranged from 0.94 percent in **Nevada** to 5.45 percent in the **District of Columbia.** The national share was 2.46 percent. These data are shown in the chart on page 12.

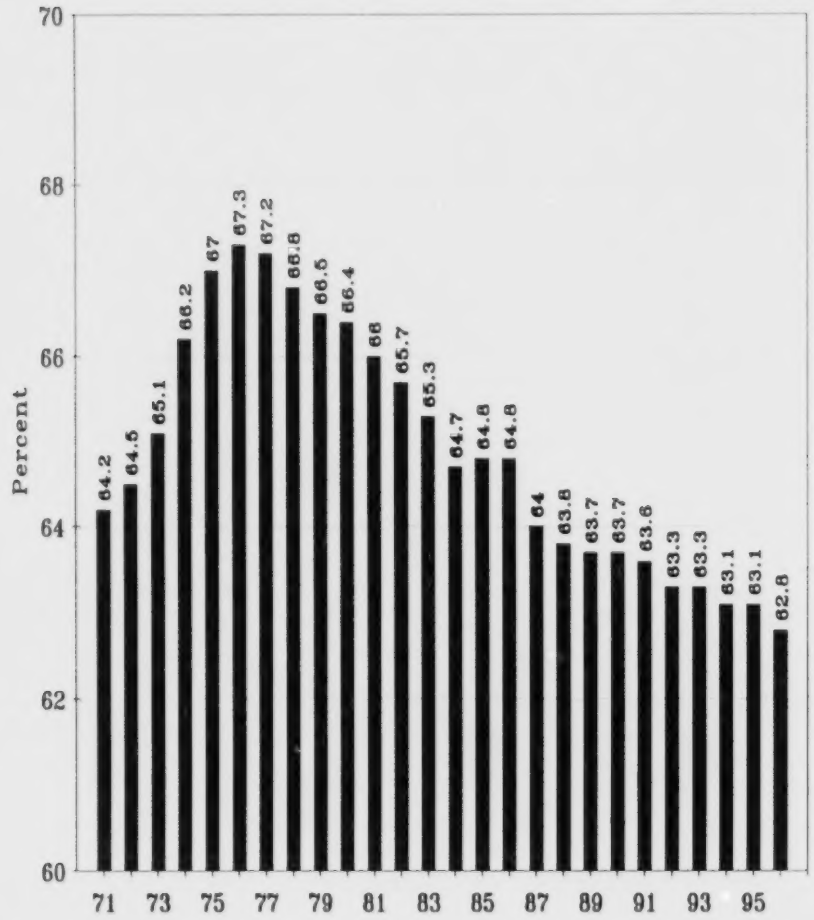
In eleven states higher education's share of GSP exceeded 3 percent. The states with the largest shares, besides DC, were: **Vermont** (4.33 percent), **Massachusetts** (4.01 percent), **Rhode Island** (3.98 percent), **Utah** (3.8 percent), **Iowa** (3.75 percent) and **Pennsylvania** (3.38 percent). (These are states where private higher education often plays a significant role, except for Utah.)

At the other end of the range, in eleven states total higher education expenditures as a share of GSP were less than two percent. The states where higher education expenditures were smallest compared to GDP, after Nevada, were: **Alaska** (1.43 percent), **Florida** (1.47 percent) and **New Jersey** (1.51 percent). Each of these states has its own unique story. But in each state other industrial interests are more dominant in state economies.

Change in Higher Education Expenditure Share of GSP
1977 to 1996



Public Institution Share of Total Current Fund Expenditures of Institutions of Higher Education 1971 to 1996



Trends in the States

Between 1977 and 1996, total current fund expenditures of institutions of higher education as a percent of GSP rose by 0.31 percent. Of course, across the states there was a very wide range of experience. The changes ranged from +1.64 percent of GDP in the **District of Columbia**, to -0.47 percent in **New Hampshire**.

In five states higher education expenditures as a share of GSP rose by more than 1.0 percent between 1977 and 1996. Besides the District of Columbia, the largest gains occurred in **New Mexico** (+1.25 percent), **Iowa** (+1.17 percent), **Pennsylvania** (+1.08 percent) and **West Virginia** (+1.06 percent).

In seven states higher education expenditures grew more slowly than Gross State Product, and thus shrank as a share of GSP. Besides New Hampshire, these states included **Arizona** (-0.46 percent), **South Dakota** (-0.45 percent), **Colorado** (-0.39 percent), **California** (-0.31 percent), **Florida** (-0.15 percent) and **Delaware** (-0.1 percent).

Public/Private Shares

Over the last three decades, public higher education has played the largest share in higher education in the United States. This was not always true. Here we have data spanning the years between 1971 and 1996 to study the total current fund expenditures of higher education.

The mix of public and private higher education varies from state to state. The mix has also varied over time. The chart on this page shows the share of total higher education expenditures flowing through public institutions. Two broad eras are evident. Between 1971 and 1976, public higher educations share increased, from 65.2 to 67.3 percent. Then between 1976 and 1996 public higher education's share shrank, to 62.8 percent by 1996. Of course this means that private higher education's share of total expenditures shrank between 1971 (35.8 percent) and 1976 (32.7 percent), and thereafter expanded to 37.2 percent by 1996.

The states, as usual, provide a wide range of experience. In 1996 the private share of total higher education expenditures ranged from 96.2 percent in the **District of Columbia** to zero in **Wyoming**.

Private higher education is more than half of the higher education total in seven states. Besides DC, these include **Massachusetts** (80.6 percent), **Rhode Island** (66.6 percent), **New York** (61.7 percent), **Connecticut** (59.3 percent), **New Hampshire** (57.1 percent), **Pennsylvania** (57.1 percent) and **Illinois** (52.0 percent).

Private institutions expended less than 10 percent of the higher education total in eight states in FY1996. Besides Wyoming, these states were **Nevada** (1.1 percent), **New Mexico** (2.6 percent), **Arizona** (3.9 percent), **Alaska** (4.2 percent), **Delaware** (6.6

percent), **Mississippi** (9.0 percent) and **North Dakota** (9.5 percent).

We have also examined changes between 1979 and 1996 in the public/private shares of expenditures of institutions of higher education by state. Across all states, the public share of these expenditures declined by 3.7 percentage points. (Or, the private share increased by 3.7 percentage points.) Of course, the trends varied across the states.

The public share of higher education expenditures increased in 12 states and decreased in 38 states. (In **Wyoming** there were no private institutions in either year.)

The states where the public institution share of higher education expenditures increased by more than 1.0 percent between 1979 and 1996 were:

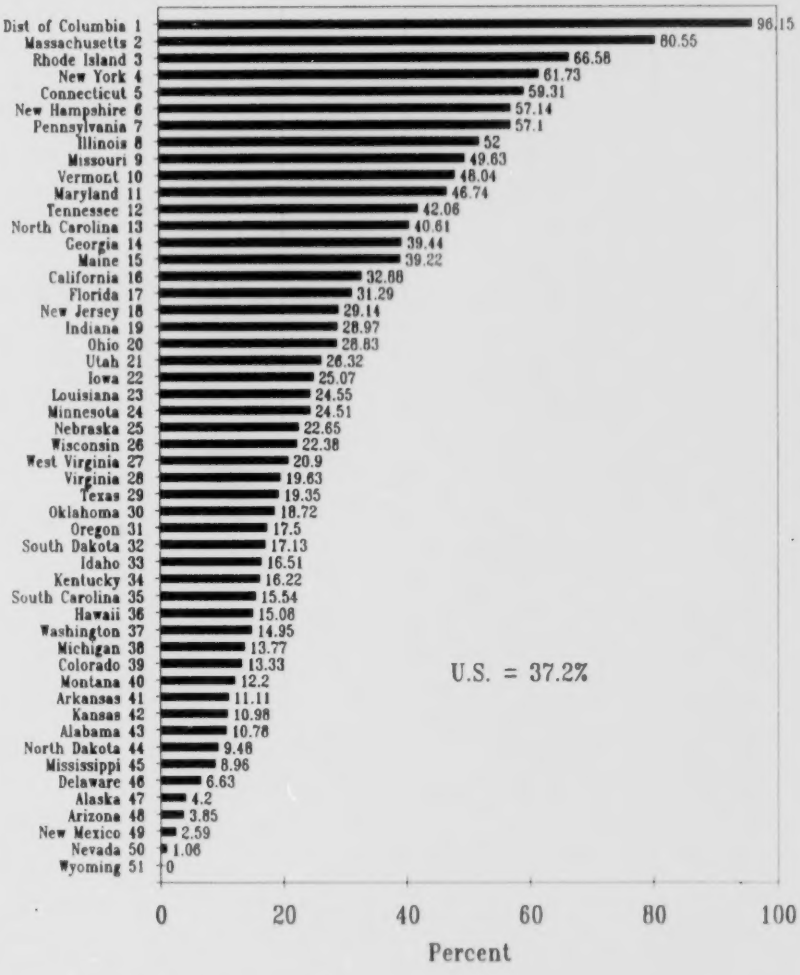
New Jersey	+5.3%
South Dakota	+5.1%
South Carolina	+3.4%
New Mexico	+1.8%
Minnesota	+1.7%
Alabama	+1.7%
Delaware	+1.6%
Arkansas	+1.1%

The states where the private institution share of higher education expenditures increased by 4.5 percent or more between 1979 and 1996 were:

Rhode Island	+13.6%
Hawaii	+11.3%
Maryland	+8.8%
Vermont	+6.9%
Wisconsin	+6.6%
North Carolina	+5.4%
Georgia	+4.9%
New York	+4.7%
Indiana	+4.6%
Maine	+4.5%
Missouri	+4.5%
District of Columbia	+4.5%

Apparently, in most states, the funding problems of higher education are not shared by private higher education. We have seen this reflected in other data as well, e.g. the growing differential between public and private college faculty compensation (OPPORTUNITY May 1997 #59). Gradually, private higher education appears to be gaining ground lost to public higher education in the three decades following World War II.

Private Share of Higher Education Expenditures
1996



- The correlation between college participation rates for students from low income families and public higher education's share of total higher expenditures in the states was -.59. That is to say: as the proportion of total higher education expenditures in a state going through public institutions went up, the college participation rate for students from low income families went down. Or, as this proportion going through private institutions went up, so too did college participation rates for students from low income families.

Is this a bad thing? We have examined simple correlations across the 50 states plus DC between college participation rates and the proportion of total higher education expenditures spent by public institutions. The results are as follows:

- The correlation between college participation rates for 19 year olds and public higher education's share of total higher education expenditures in the states was -.37. Again, college participation rates were negatively correlated with public institution's shares of higher education expenditures, and positively correlated with private institutions' shares.

This is an overly simplified analysis, of course. A more thoroughly specified model might produce the opposite results. But these findings are intriguing nevertheless. The states that rely more on private higher education tend to have higher college participation rates than do the states that rely more heavily on public institutions. Higher education opportunity should certainly not be attached only to state investments in public higher education institutions.

Summary

Higher education can be viewed as an industry, as a large-scale business activity with defined customers, businesses, products, employees and revenue and expenditures.

Our analysis of total current fund expenditures of institutions of higher education and Gross State Product shows at least the following:

- About 2.5 percent of GSP is accounted for by higher education institutions.
- This proportion rose from the early 1950s, peaked in 1993, and has declined steadily since then.
- Across the states, higher education's share of GSP ranged from 5.5 percent in the **District of Columbia** to .9 percent in **Nevada**.
- Over the years between 1977 and 1996, higher education's share of GSP increased by a wide range, from 1.6 percent in the **District of Columbia** to a decline of 0.5 percent in **New Hampshire, Arizona** and **South Dakota**.
- The share of higher education expenditures by public institutions increased from 64 percent in 1971, to a peak of 67 percent in 1976, and has declined steadily thereafter to less than 63 percent by 1996.
- Private higher education's share of the total ranges from zero in **Wyoming** (which has no private institutions) to 96 percent in the **District of Columbia**.
- Between 1979 and 1996, the public share of higher education expenditures increased in 12 states, while in 38 states the private share of the total increased.
- College participation rates are positively correlated with private higher education's share of total state expenditures on higher education.

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Freshmen Point-of-Entry into Higher Education: Public or Private, Two-Year or Four-Year by State 1991 to 2000

For those freshmen that enroll in college in the fall following high school graduation:

- About three-quarters enroll in public institutions and one quarter enroll in private institutions.
- About two-thirds enroll in four-year institutions and one-third enroll in two-year institutions.
- About four-fifths enroll in their home state, and about one-fifth bypass in-state institutions for colleges in another state.

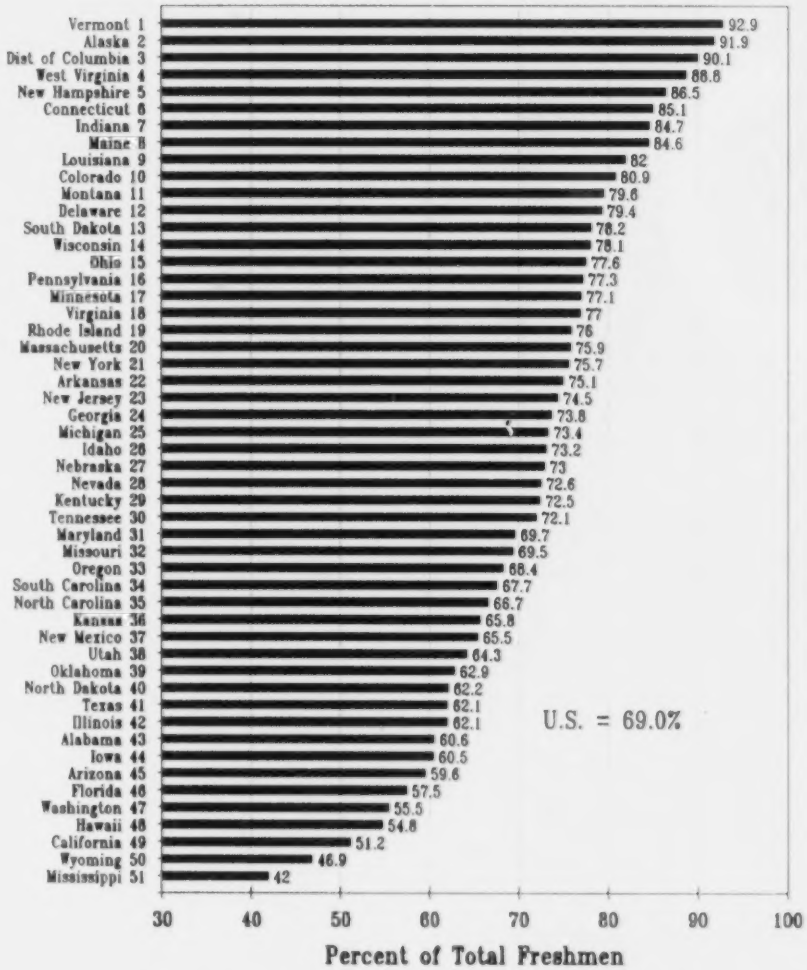
Over the last decade or so, the proportion of freshmen entering public institutions has been shrinking slightly. At the same time, the proportion of freshmen entering private institutions has been growing slightly.

Similarly, the proportion of freshmen beginning their higher education careers immediately after high school in four-year institutions has been increasing quite substantially. Likewise, the proportion beginning their careers in two-year colleges has been shrinking.

But the real variation in point-of-entry into higher education occurs across the states. In a few states most freshmen begin their higher educations immediately after high school in public two-year colleges. But more often the pattern is to begin their studies in private four-year colleges or universities.

This variation across states and time appears to be at least mildly related to probability of reaching college in the fall following high school graduation.

Recent High School Graduates Entering 4-Year Institutions
1998



The geographic patterns in these data reflect student demand and institutional supply intersections driven in part also

by public policy decisions made at the state level.

Here we explore data on point-of-entry into higher education. Our special interest is in variations across the states. So we limit this analysis to college freshmen who have graduated from high school during the previous 12 months. The most recent data in this series is for 1998, but data for prior years in similar formats exists and offers some insight into trends in these data as well.

The Data

The data used in this analysis describe college freshmen who were recent high school graduates. That is: the data reported here describe college entry patterns for college freshmen who have graduated from high school during the previous 12 months. This tight time limit permits more accurate linkage of college freshmen to the state in which they graduated from high school, and thus insightful and comparative state patterns of college access are possible to describe. Young adults are highly geographically mobile and their state of residence may change significantly for many people before they start college.

Two sources of data are used here to describe point-of-entry into higher education for recent high school graduates. First, the Bureau of Labor Statistics has published national data on college enrollment (and labor force participation) for recent high school graduates since 1959. These data are collected in the October Current Population Survey, and also appear in the Census Bureau reports on school enrollments. These reports provide useful national data on trends in college continuation for recent high school graduates, mostly by gender and race/ethnicity (see OPPORTUNITY #107 May 2001).

Other useful data on recent high school graduates are collected through the IPEDS enrollment surveys in even-numbered years. In particular, we have used the residence and migration data by state for college freshmen who graduated from high school during the previous 12 months collected in the IPEDS fall enrollment survey.

The IPEDS data permit study of the transition from high school into college by state of residence and state of enrollment (the difference permits interstate migration studies). In particular because of the form in which these data are reported, they can also be used to study 4-year compared to 2-year college entry and entry into public or private institutions. Some of the data (from BLS) also permit the long-term study of full-time compared to part-time freshmen college enrollment.

OPPORTUNITY has reported analyses of the data on interstate migration (OPPORTUNITY #103 January 2001) and full-time/part-time enrollment (OPPORTUNITY #96 June 2000) status recently. Here for the first time we examine these data from the perspectives of 4-year/2-year entry, and public/private college entry. In particular we are interested in state-level analyses with these data.

The data used for this analysis are available for examination in a spreadsheet posted to our website:

http://www.postsecondary.org

Look for it under the Spreadsheets button. This spreadsheet includes more data and detail than that summarized for this report.

4-Year or 2-Year Entry

In the fall of 1998, our two data sources provide somewhat different estimates of the proportion of college freshmen who graduated from high school in the previous 12 months in 4-year and 2-year institutions. These estimates appear in the following

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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table.

Number of 1997-98 High School Graduates Enrolled in College in October 1998

Source	4-Year	2-Year	Total
BLS	1,159,000	685,000	1,844,000
NCES	1,096,242	499,264	1,595,506

Using the BLS data (from the Fall 1998 Current Population Survey), 62.9 percent of the fall 1998 college freshmen who were recent high school graduates entered 4-year institutions and 37.1 percent entered 2-year institutions. Using the NCES data (from the fall 1998 IPEDS Enrollment Survey), 68.7 percent of the fall 1998 college freshmen who were recent high school graduates entered 4-year institutions and 31.3 percent entered 2-year institutions. The numbers are similarly defined, but uncomfortably different in their reporting. BLS estimates about 60,000 more freshmen in 4-year and 186,000 more 2-year institutions than NCES counts. We cannot explain this difference. (Ah, such is the life of a number-cruncher...)

In either case, about two-thirds of the college freshmen entering directly out of high school enrolled in 4-year institutions, and about one-third entered 2-year institutions between 1994 and 2000.

Patterns. The NCES data permit examination of the distribution of the 1998 college freshmen between 4-year and 2-year institutions by state. These data are shown in the chart on page 1 of this issue of OPPORTUNITY. In 1998 the proportion of entering freshmen enrolled in 4-year colleges ranged from 92.9 percent in **Vermont**, to 42.0 percent in **Mississippi**.

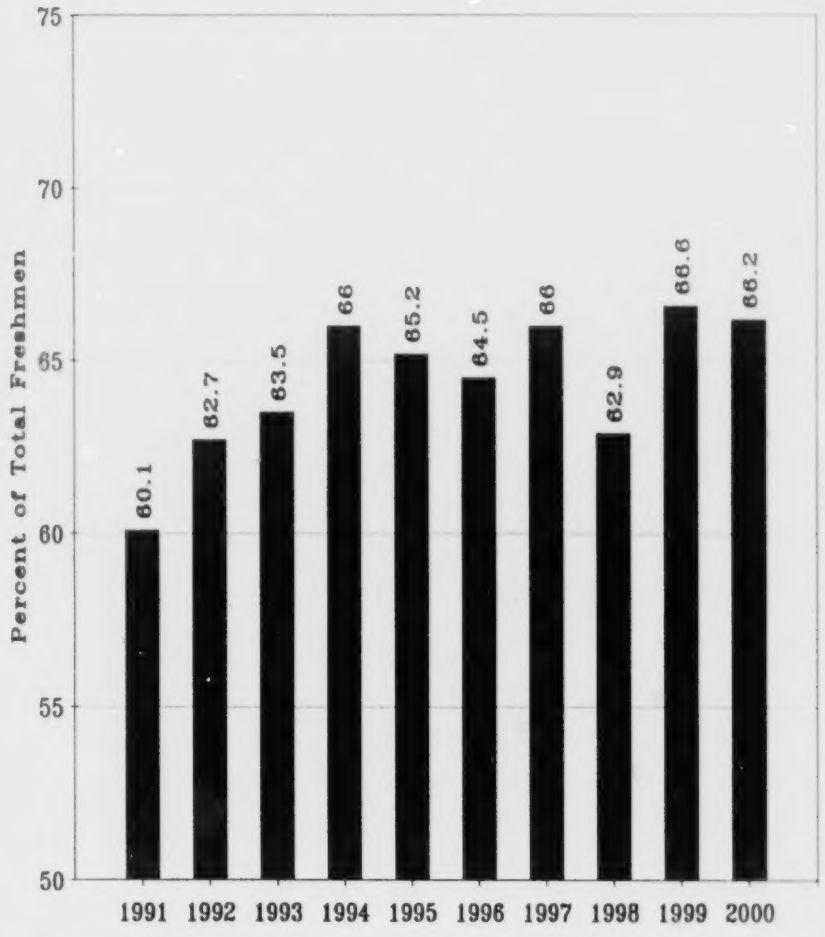
In ten states over 80 percent of the college freshmen who were recent high school graduates enrolled in 4-year institutions. Less than 20 percent enrolled entered 2-year colleges. These states, besides Vermont, included **Alaska** (91.9%), **District of Columbia** (90.1%), **West Virginia** (88.8%), **New Hampshire** (86.5%), **Connecticut** (85.1%), **Indiana** (84.7%), **Maine** (84.6%), **Louisiana** (82.0%) and **Colorado** (80.9%).

In seven states less than 60 percent of the freshmen were enrolled in 4-year institutions. Besides Mississippi, these states were: **Wyoming** (46.9%), **California** (51.2 percent), **Hawaii** (54.8%), **Washington** (55.5%), **Florida** (57.5%) and **Arizona** (59.6%).

Trends. The chart on this page shows the proportion of enrolled college freshmen who were recent high school graduates entering 4-year institutions for each year between 1991 and 2000. This chart shows significant growth in the proportion entering 4-year colleges and universities between 1991 and 1994, from 60 to 66 percent. This growth is followed by fluctuations around the 66 percent share between 1994 and 2000.

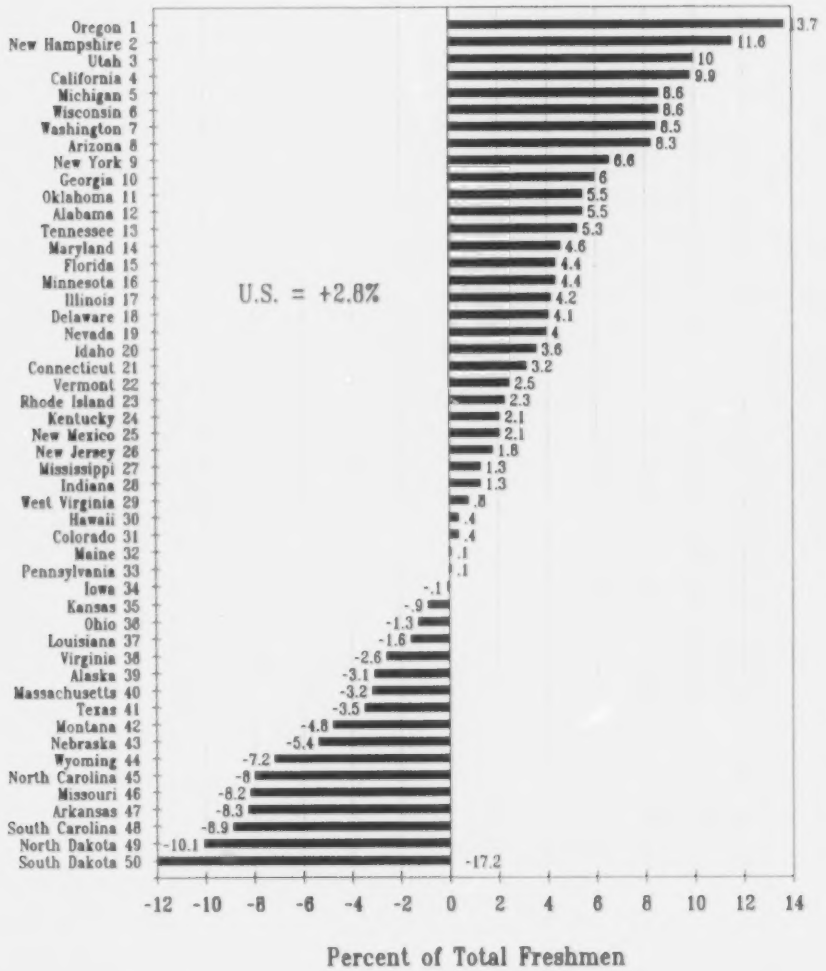
Patterns and Trends. The chart on

Recent High School Graduates Entering 4-Year Institutions
1991 to 2000



Source: Bureau of Labor Statistics

Change in 4-Year Institutions' Share of Total Freshmen 1992 to 1998



this page shows the *change* in the proportion of freshmen who were recent high school graduates that entered 4-year institutions between 1992 and 1998 by state. These data are collected and reported by the National Center for Education Statistics.

In the NCES data, the proportion of college freshmen enrolled in 4-year institutions increased by 2.8 percent between 1992 and 1998. However, this apparently small change in the national data masks very much larger shifts across the states.

In **Oregon**, for example, the proportion of fall 1998 college freshmen that were recent high school graduates and who were enrolled in a 4-year college or university increased by 13.7 percent. However, at the other extreme the proportion of these freshmen enrolled in a 4-year college in **South Dakota** decreased by 17.2 percent. Clearly, the aggregate data obscure widely shifting patterns across the states between 1992 and 1998.

Besides Oregon, other states where the proportion of freshmen entering 4-year institutions increased by 8 percent or more between 1992 and 1998 were: **New Hampshire** (+11.6%), **Utah** (+10.0%), **California** (+9.9%), **Michigan** (+8.6%), **Wisconsin** (+8.6%), **Washington** (+8.5%) and **Arizona** (+8.3%). During this era of national economic prosperity, students entering college in these states shifted in substantial numbers from 2-year to 4-year colleges and universities.

At the other end of the scale, the flow from high school into college shifted away from 4-year institutions and into 2-year institutions. Besides South Dakota, the states where this shift was largest were: **North Dakota** (-10.1%), **South Carolina** (-8.9%), **Arkansas** (-8.3%), **Missouri** (-8.2%), **North Carolina** (-8.0%) and **Wyoming** (-7.2%). In these states there was a substantial shift in freshmen entry into higher education from 4-year to 2-year colleges.

Public or Private Entry

The previous analysis describes entry from high school into 4-year compared to 2-year institutions. The following analysis describes entry from high school into public compared to private institutions.

In 1998 out of 1,542,978 freshmen entering higher education who were recent (1997-98) high school graduates, 692,561 enrolled in public 4-year institutions, 443,481 entered public 2-year institutions, 371,689 entered private 4-year institutions, and 35,247 enrolled in private 2-year institutions, according to the National Center for Education Statistics.

Of the total, 73.6 percent of all freshmen entering college who had graduated from high school during the previous 12 months enrolled in public colleges and universities. The remaining 26.4 percent began their higher education studies at private colleges and universities.

The NCES data have been collected and reported since 1986 in even numbered years. The data from the 1986 and 1988 surveys appear to be incomplete for several states, and the 1990 data were not even released by NCES due to serious reporting problems in a few states. However, the data for 1992, 1994, 1996 and 1998 appear to be sufficiently complete to compile a short time series.

Recent High School Graduates Enrolled in Public and Private Institutions, 1992-1998

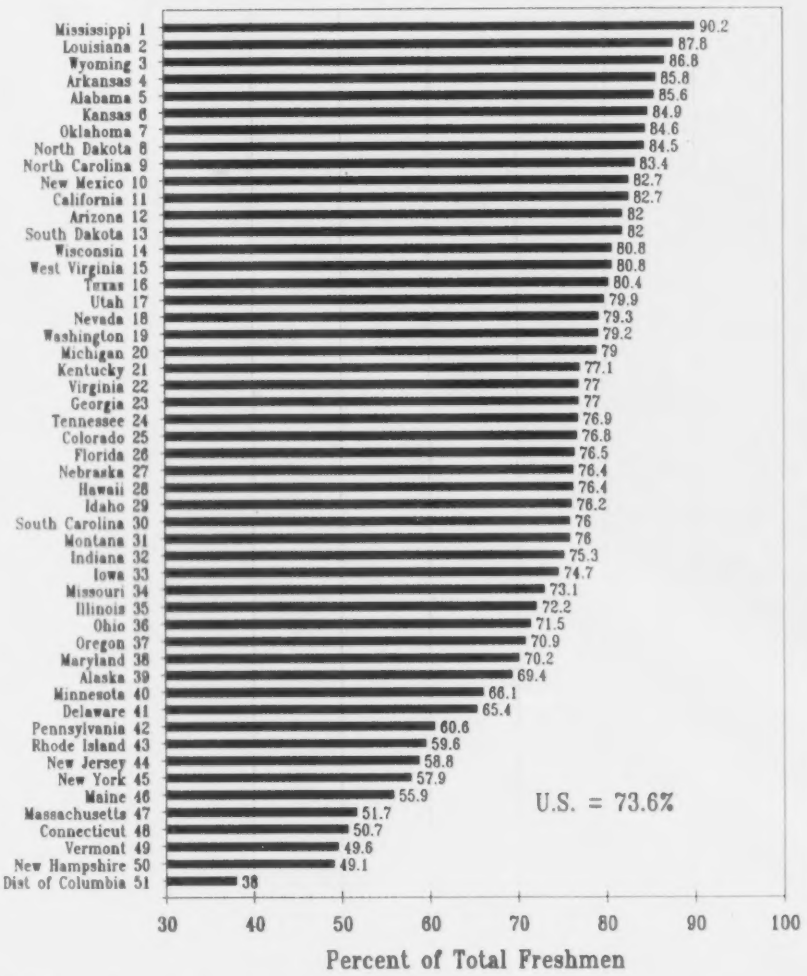
Year	Public	Private	Total
1998	1,136,042	406,936	1,542,978
1996	1,109,967	370,310	1,490,277
1994	1,054,007	355,510	1,409,517
1992	1,004,092	336,102	1,340,194

Over this relative short time span, the share of these freshmen enrolled in public institutions declined from 74.9 percent in 1992, to 74.8 percent in 1994, to 74.5 percent in 1996, to 73.6 percent in 1998. (Other data suggests this enrollment shift from public to private institutions has been under way for many more years than this.)

Patterns. The chart on this page shows the proportion of college freshmen in each state that were 1997-98 high school graduates entering public colleges and universities. (The remainder entered private institutions.) The public college share ranged from 38.0 percent in the **District of Columbia** to 90.2 percent in **Mississippi**.

The New England and mid-Atlantic states dominate the bottom of this list, with the smallest shares of freshmen entering public institutions (or, the largest proportions entering private institutions). In four states, the proportion of freshmen who were recent high school graduates entering public and private institutions were nearly equal: **New Hampshire** (49.1% public), **Vermont** (49.6%), **Connecticut** (50.7%) and **Massachusetts** (51.7%). These tend to be states with relatively high per capita personal income.

Recent High School Graduates Entering Public Institutions 1998

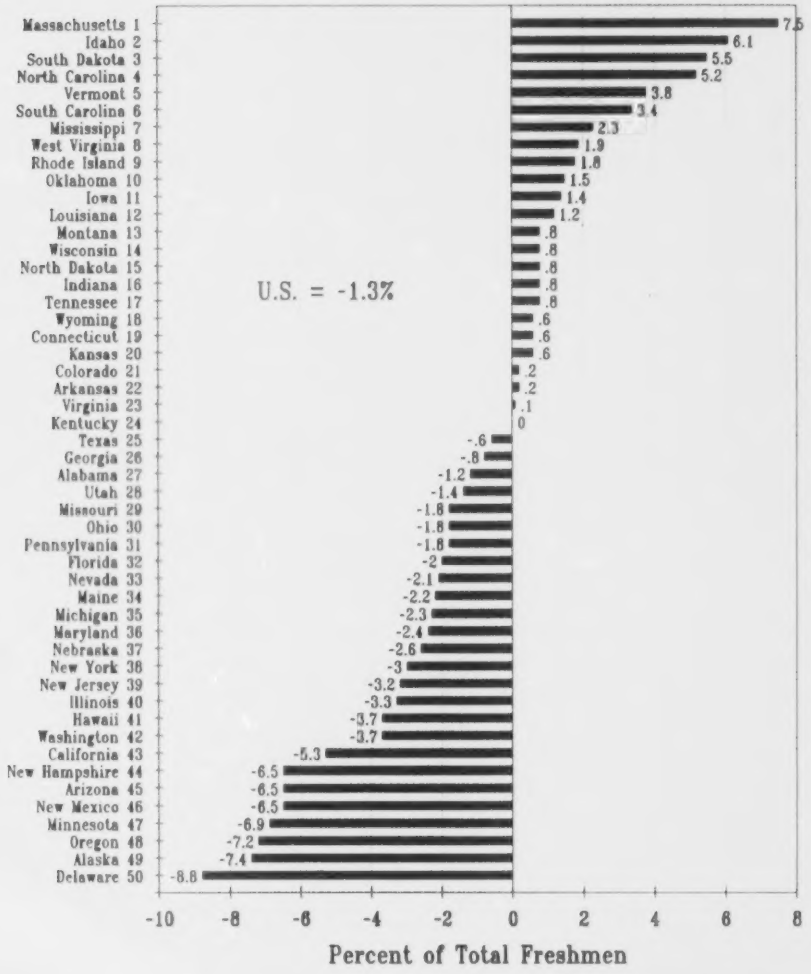


At the other end of the scale, more than 80 percent of freshmen entered public institutions in sixteen states. In addition to Mississippi, the states where more than 85 percent of the entering freshmen enrolled in public institutions were **Louisiana** (87.8%), **Wyoming** (86.8%), **Arkansas** (85.8%) and **Alabama** (85.6%). These tend to be states with relatively low per capita personal income.

Trends. Between 1992 and 1998, the proportion of college freshmen entering public institutions declined by 1.3 percentage points.

Of course this varied widely across the 50 states. In 23 states the proportion entering public institutions increased, in some cases substantially, between 1992 and 1998. In **Massachusetts** the proportion of freshmen entering public institutions increased by 7.5 percent, from 44.2 to 51.7 percent. Other states with large increases in the

Change in Public Institutions' Share of Total Freshmen 1992 to 1998



proportion of freshmen entering public institutions during this period were: **Idaho** (+6.1%), **South Dakota** (+5.5%), **North Carolina** (+5.2%), **Vermont** (+3.8%) and **South Carolina** (+3.4%).

Only in **Kentucky** did the share of freshmen entering public (and private) institutions remain constant (at 77.1%).

In 26 states the share of freshmen entering public institutions declined between 1992 and 1998. Or, the share entering private institutions increased. The states with the largest freshmen enrollment shifts from public to private institutions were: **Delaware** (-8.8%), **Alaska** (-7.4%), **Oregon** (-7.2%), **Minnesota** (-6.9%), **New Mexico** (-6.5%), **Arizona** (-6.5%), **New Hampshire** (-6.5%) and **California** (-5.3%).

Summary

The data examined here enable the study of entry into higher education by level and control of institution, for each state, over the period between 1992 through 1998.

By level, 69 percent of all 1997-98 high school graduates entering college in the fall of 1998 enrolled in 4-year colleges and universities. About 31 percent enrolled in 2-year colleges. The proportion entering 4-year institutions across the states ranged from 42 percent in Mississippi to 93 percent in Vermont.

Past research has found that the surest path to a bachelor's degree is to enroll full-time immediately after high school in a 4-year institution. These state data suggest that students in some states are far more likely to earn bachelor's degrees from college than are students in other states because they are on the surest track.

By control, 74 percent of all 1997-98 high school graduates entering college in the fall of 1998 enrolled in public colleges and universities. About 26 percent entered private institutions. Across the states the proportion entering public institutions ranged from 38 percent in the District of Columbia to 90 percent in Vermont.

Since 1976 the financial expenditures of higher education institutions have been shifting from publics and toward privates (OPPORTUNITY #110 August 2001). This results mainly from the sharp retrenchment in state tax support for higher education since 1979 (OPPORTUNITY #103 January 2001) and the unequal effects of the subsequent tuition buildup. One of the consequences has been a slowly eroding competitive of public institutions compared to private institutions. As the freshmen enrollment data here suggest, this is also showing up in shifting enrollments from publics to privates, although most freshmen still enter public institutions.

The dynamic processes of higher education opportunity are reflected in these data, as well as the rich variation across the states.

The National School Lunch Program FFY1993 to FFY2000

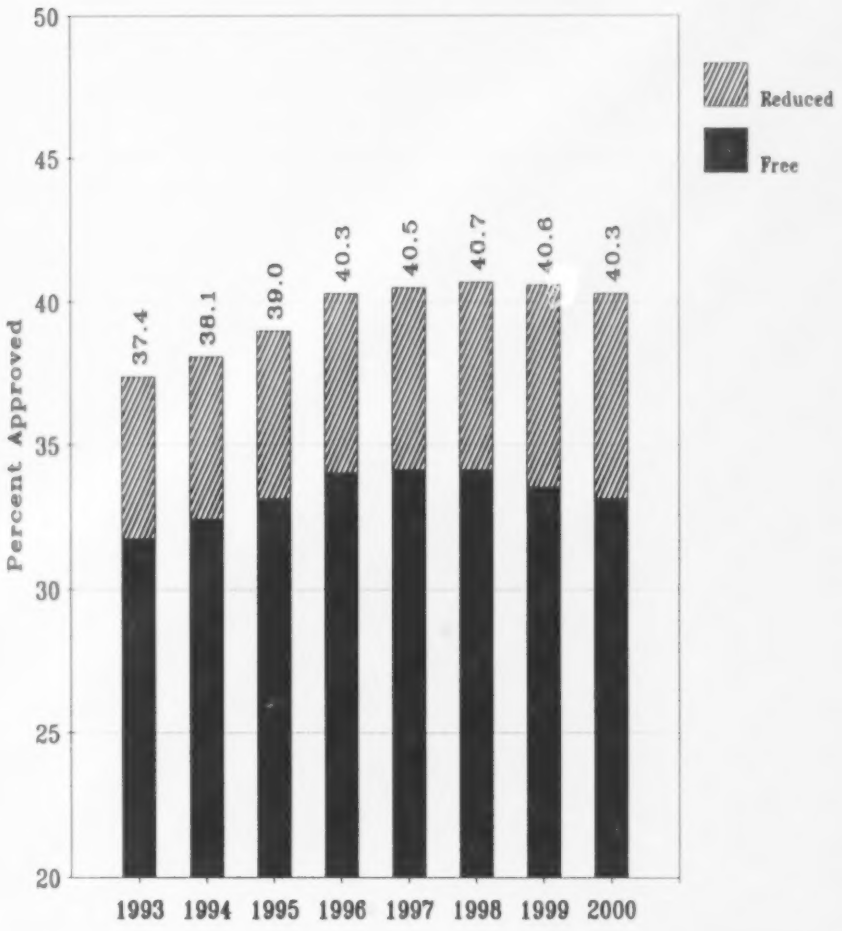
The National School Lunch Program is a federal child nutrition program targeted to assist students in K-12 education with nutritious meals, mainly lunches. Students from low income families receive free or reduced price meals that are subsidized. Data collected through this program provide useful information on the number of children from low income families that are enrolled in the K-12 education system in each state that are headed for higher education.

Our examination of these data finds that:

- About 40 percent of all children in K-12 education are approved for receipt of free or reduced-price school lunches.
- The overall proportion of school children approved for subsidized lunches has grown during the 1990s, although the proportion qualifying for free lunches (lowest family income) has declined during the last two years.
- The proportion of K-12 children approved for free or reduced-price school lunches ranges from 17 to 63 percent across the states.
- Between 1993 and 2000 the proportion of K-12 school children approved for subsidized school lunches increased in 47 states and jurisdictions, and decreased in 6 states and jurisdictions.

These data provide a useful foundation for state planning to assist students from low income families to prepare for and finance their higher educations. These data also provide ways of assessing the current effectiveness of efforts in each state to foster higher educational opportunity in each state. This assessment will appear in a future issue of OPPORTUNITY.

National School Lunch Program Approved Participation Rate for Free and Reduced Price Lunches 1993 to 2000

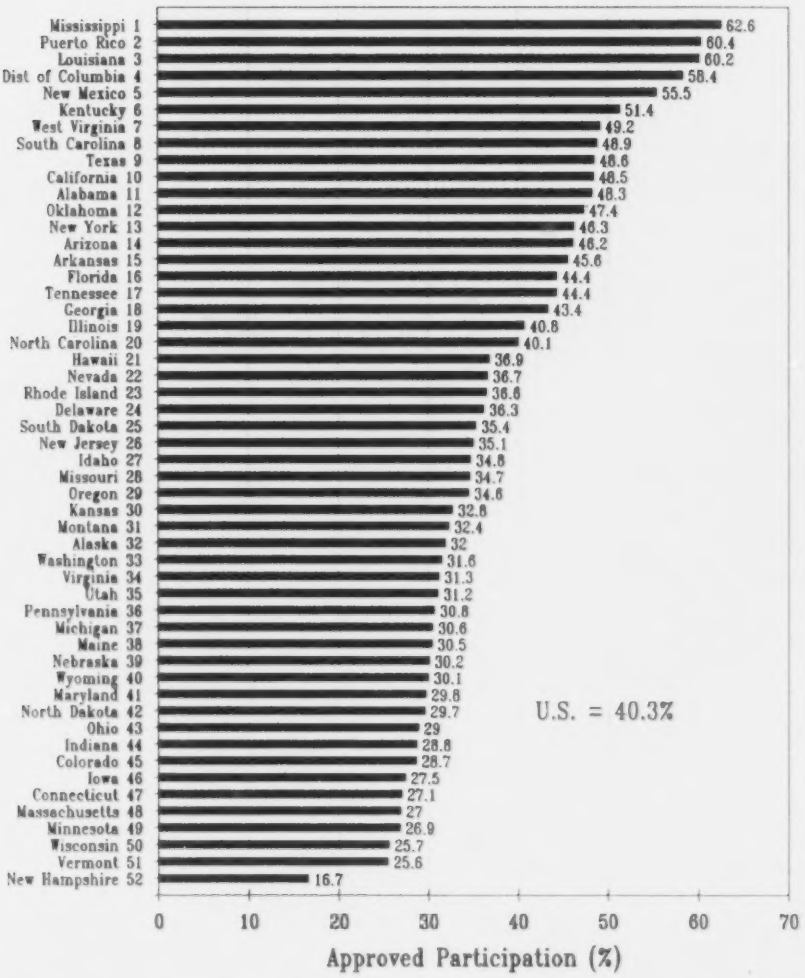


National School Lunch Program

The National School Lunch Program ACT was signed into law by President Harry Truman in 1946. It's purpose, as explained in the legislation was:

It is hereby declared to be the policy of Congress, as a measure of national security, to safeguard the health and well-being of the Nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other food, by assisting the States, through grants-in-aid and other means, in providing an adequate supply of food and other facilities for the establishment, maintenance, operation and expansion of nonprofit school lunch programs.

National School Lunch Program
Approved Participation Rate by State, 2000



Currently, the National School Lunch Program operates in about 97,000 public and private non-profit schools and residential care institutions. Lunches are provided to more than 27,000,000 school children each day.

In 1998 Congress authorized after school snacks for children in after school educational and enrichment programs.

Children may qualify for free or reduced-price school lunches by meeting family income guidelines:

- Children from families with incomes at or below 130 percent of the federal poverty level are eligible for free lunches. Currently, for a family of 4, 130 percent of the poverty level is $22,945.
- Children from families with incomes between 130 and 185 percent of the federal poverty rate are eligible for reduced-price lunches, for which the charge is $.40. Currently, 185 percent of the federal poverty level is $32,653 for a family of four.
- Children from families with incomes greater than 185 percent of the federal poverty level pay full price for their lunches, but these meals are often still subsidized to a limited degree.

The Data

General information on the National School Lunch Program is available on the website of the U.S. Department of Agriculture, at:

http://www.fns.usda.gov/ncd/Lunch/default.htm

The data used in the charts in this analysis were prepared for OPPORTUNITY by Jeffrey Derr of the Food and Nutrition Service of the Department of Agriculture. We have posted his tabulated data reports with state data for the federal fiscal years 1993 through 2000 on our website at:

http://www.postsecondary.org

Click on either the Spreadsheets or TRIO pages for these .pdf reports.

National Trends

For 2000 there were 48 million school children in the 50 states, the District of Columbia, Puerto Rico, Virgin Islands, Guam and Department of Defense schools. Of this total nearly 16 million were approved for free school lunches and about 3.5 million were approved for reduced price lunches. Or, 33.1 percent were approved for free lunches and came from families with incomes below 130 percent of the federal poverty level. Another 7.2 percent were approved for reduced price school lunches and came from families with incomes of between 130 and 185 percent of the federal poverty level.

In 2000 40.3 percent of school children came from families with incomes less than 185 percent of the federal poverty level. In 1993--the first year of the current program--37.4 percent of school children fell below the 185 percent threshold. Thus, the proportion of school children living in

families with income below 185 percent of poverty has grown in these states. As shown in the chart on page 7, most of this growth occurred between 1993 and 1997.

State Patterns

The proportion of school children approved for free or reduced-price school lunches in 2000 ranged from 16.7 percent in **New Hampshire** to 62.6 percent in **Mississippi**. (In the **Virgin Islands**, not shown in the chart, 82.0 percent of the school were approved. In the **Department of Defense** schools, 24.4 percent of the children were approved.)

These school lunch approval rates are highly correlated to other measures of state income. For example, the correlation across the states between the subsidized school lunch approval rate in 1999 and the average state poverty rate for 1996-98 was +.845.

State Trends

The chart on this page shows the change in subsidized school lunch approval rate in each state between 1993 and 2000. Overall the approval rate increased by 2.8 percent. But the change varied sharply across the states. In **Hawaii** the approval rate for subsidized lunches increased by 10.8 percent, from 26.1 to 36.9 percent, between 1993 and 2000. In **South Dakota** the subsidized school lunch rate decreased by 14.9 percent, from 50.3 to 35.4 percent.

Most states followed the national trend. The subsidized lunch approval rate increased in 46 states and jurisdictions between 1993 and 2000. The rate decreased in six states and jurisdictions during this same period.

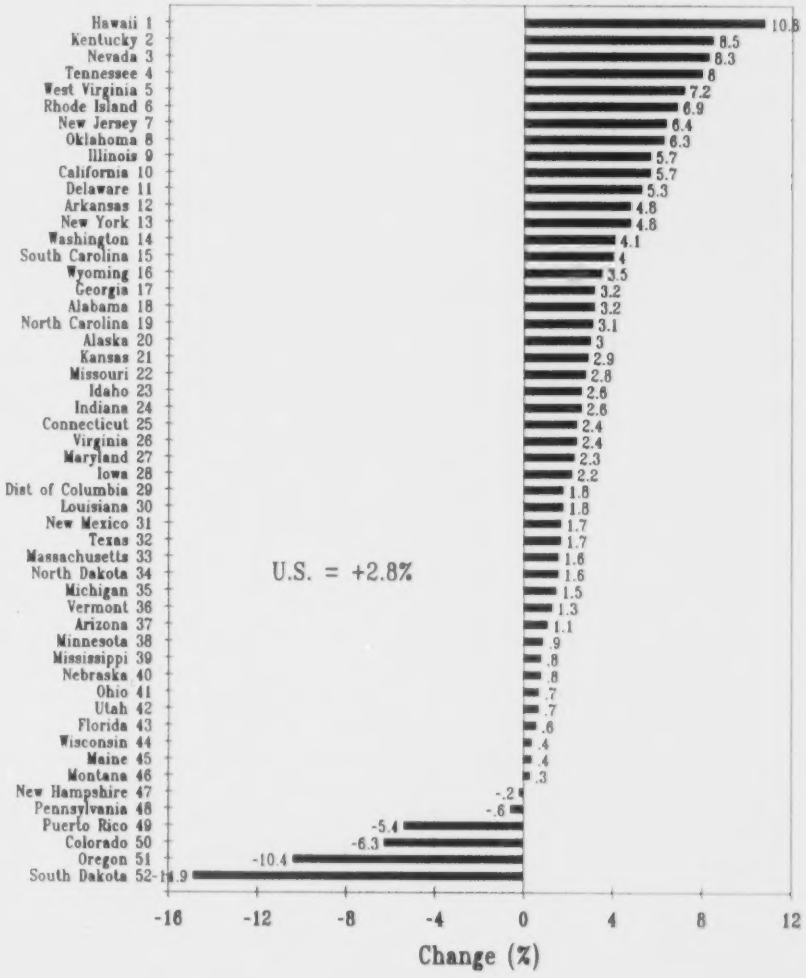
Summary

There are profound and difficult issues posed by these data. About 40 percent of children in the K-12 pipeline live in families with incomes below 185 percent of the federal poverty level. Under the Federal Methodology of assessing family ability to pay for college, the vast majority of these students are living in families that have a zero Expected Family Contribution--or have NO resources to pay for college. If they want to go to college, they will be full-need.

Moreover, the proportion of these low income K-12 students has grown in nearly every state during the 1990s. In 46 states and jurisdictions, the pipeline is filling with students who will require financial aid to be able to finance their higher educations.

Few states are preparing to address this need. The federal government which made some progress in the 1990s is now preoccupied financing a war against terrorism, and just spent future budget reserves on a tax cut that provided no benefit to low income families. The prospects for financial assistance for these children from low income families to pay for college grow bleaker by the month.

Change in School Lunch Program Approval Rates
1993 to 2000



Computers and Internet Access by Children at Home 2000

The tools of information technology have become indispensable in the work of most of the highest paid jobs in the economy. More than two thirds of men and women employed as mangers/ professionals or in technical/sales/administrative support occupations used computers in their work in 1997. For both men and women, these were also the highest paid occupations. In contrast those occupations that were least likely to employ computers in their work were also the poorest paid. The linkage between computers and the best paying jobs is strong and strengthening.

Thus the use of computers by children during their educational years in preparation for college and adult life is an important public policy concern. Which children have access to information technology, where, and how they use it helps identify where preparation for college and careers is proceeding and where gaps in access and training remain to be filled.

As of August 2000, about 90 percent of school-age children had access to a computer either at school or at home. About 57 percent had access both at home and at school, 23 percent had access only at school, and 10 percent had access only at home. The remaining 10 percent had access to a computer neither at school nor at home, according to the Census Bureau.

Here we examine access to and use of computers and the internet at home mainly by children. Our interest is from an educator's perspective. We are concerned about the equality of opportunity of information technology to students from groups typically under represented in higher education, especially children from low family income and first generation families.

Our analysis of available data finds that:

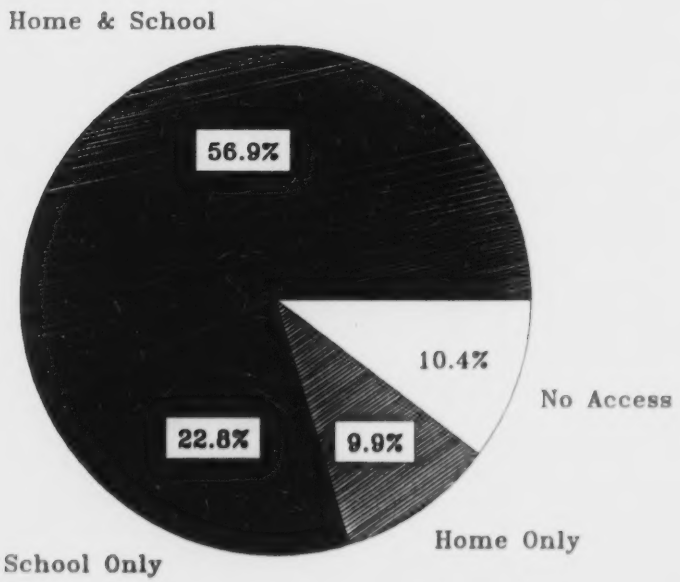
- The share of households with computers has grown from 8.2 percent in 1984, to 36.6 percent by 1997, to 51.0 percent by 2000.
- The share of households with internet access has grown from 18.0 percent in 1997 to 41.5 percent by 2000.
- The share of households with computers and internet access increases with family income and educational attainment of the householder.
- Asian/Pacific Islander and white non-Hispanic households are about twice as likely to have computers and internet access as are black and Hispanic households.
- Households in the western states are most likely to have computers and internet access, and households in the south are least likely.
- Households in the suburbs are most likely to have computers and internet access, those in nonmetropolitan areas are least likely.

These and many other findings--particularly regarding differences between different groups of children--are found in the current and past reports from the Census Bureau. We explore them here.

The Data

The Census Bureau has gathered data on computer ownership and use and internet access and use, at home and at work, on children and adults,

Access to Computers
Among School-Age Children
2000



through the Current Population Survey, since 1984. These data have been reported by the Census Bureau in its P23 series of Current Population Reports. The Census Bureau reports on computers are available from their website at:

http://www.census.gov/population/www/socdemo/computer.html

Some of these data have also been reported by the National Telecommunications Information Agency in its series of reports on *The Digital Divide*. These data are available at:

http://digitaldivide.gov

Taken all together, they provide a remarkable and very useful series of descriptions on the evolution of information technology in the United States over the last two decades.

Households

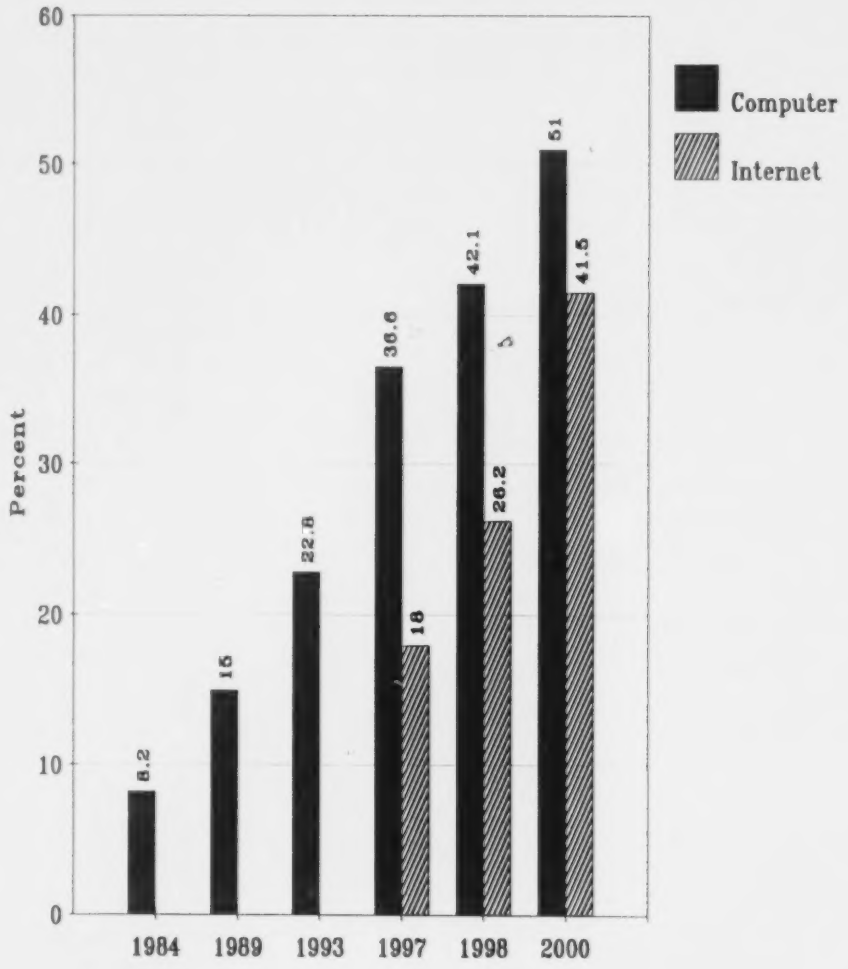
According to the Census Bureau, in August 2000 there were 105,247,000 households in the U.S. Of these, 53,716,000 or 51.0 percent, had computers. Also, 43,639,000 or 41.5 percent had internet access.

In 1984 when the Census Bureau first surveyed households for computers, 8.2 percent had computers. The proportion with computers has grown rapidly since then, and has more than doubled between 1993 and 2000.

The Census Bureau began surveying for internet access in households in 1997. Between 1997 and 2000, the share of households with internet access has more than doubled, from 18 to 41.5 percent.

Of course computers and internet access were highly unequally distributed across households in 2000, depending on different characteristics of householders. Some of these characteristics were:

Households with Computers and Internet Access
Various Years: 1984 to 2000

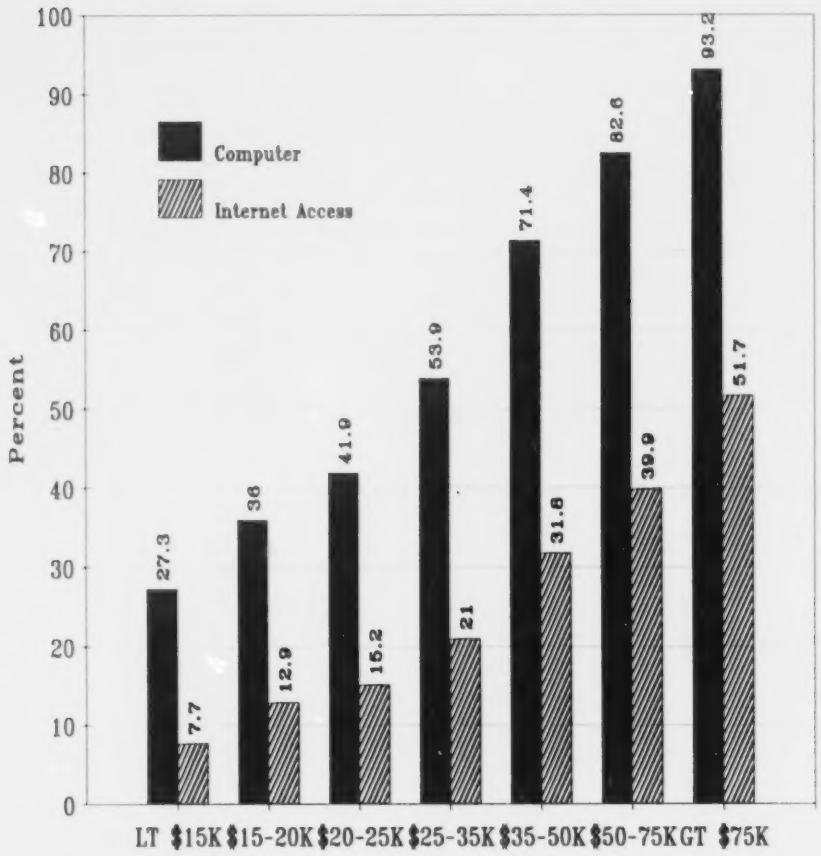


Age of householder. Computer ownership (61.0 percent) and internet access (50.2 percent) peaked in households where the householder was between the ages of 25 and 44 years. Computers and internet access were least where the householder was 65 years and over.

Race/ethnicity. Computers and internet access were highest in households where the householder was Asian or Pacific Islander (60.3 for computers and 49.0 percent for internet access). These rates were lowest for blacks (32.8 and 23.6 percent) and Hispanics (33.7 and 23.6 percent).

Educational attainment. Computers and internet access increase sharply with the educational attainment of the householder. Computer presence in the household was 18.2 percent where the householder was not a high school graduate, 39.6 percent for high school graduates, 60.3 percent for householders with some college and 75.7 percent for householders with a bachelors degree or more. Internet access followed a similar pattern: households headed by a person who

Access to a Home Computer and Internet Use at Home for Children 3 to 17 Years by Family Income 2000



Source: Census Bureau

had not completed high school was 11.7 percent, compared to 29.9 percent for high school graduates, 49.0 percent for those with some college, and 66.0 percent for those with bachelors degrees or more.

Size of household. Households with five or more family members were most likely to have computers (63.1 percent) and internet access (49.7 percent). Households of one person were least likely (30.1 and 24.0 percent).

Household type. Married couple households were most likely to have computers (63.6 percent) and internet access (52.7 percent). Nonfamily households were least likely to have computers (34.6 percent) and internet access (28.1 percent).

Presence of school-age children. Households with children ages 6 to 17 years were most likely to have computers (66.8 percent) and internet access (53.3 percent).

Region. Households in the west were more likely to have computers (57.2 percent) than were houses in the south (47.1 percent). Similarly, households in the west were more likely to have internet access (46.6 percent, and those in the south were least likely (37.9 percent).

Metropolitan status. Households in metropolitan areas but outside central cities (suburbs) were most likely to have computers (57.5 percent) and internet access (47.6 percent). Households in nonmetropolitan areas were least likely to have computers (41.8 percent) and internet access (31.6 percent).

Family income. Among the 72,044,000 families, 58.6 percent had computers and 47.6 percent had internet access. Computers ranged from 23.4 percent in families with incomes under $15,000, to 87.8 percent in families with incomes of more than $75,000. Internet access ranged from 14.3 percent among families with incomes of less than $15,000 to 79 percent in families with incomes greater than $75,000.

Children

In August of 2000 there were 60,635,000 children between the ages of 3 and 17 years. Of this total, 39,430,000 or 65.0 percent had access to a computer at home. Also, 18,437,000 or 30.4 percent of all children used the internet at home.

Generally, childrens' access to computers and the internet at home follows the pattern for households. There are some interesting exceptions among racial/ethnic groups, regions, cities and in other classifications of the population.

Family income. Computer access and internet use at home increase for children ages 3 to 17 years with family income. As shown in the chart on this page, home computer access for children from families with incomes under $15,000 was 27.3 percent. This increased with income.

For children from families with incomes greater than $75,000, 93.2 percent had computer access at home.

A similar patterns holds for internet use at home. For children born into the lowest income families, below $15,000, 7.7 percent used the internet at home, compared to 51.7 percent for children born into families with incomes above $75,000.

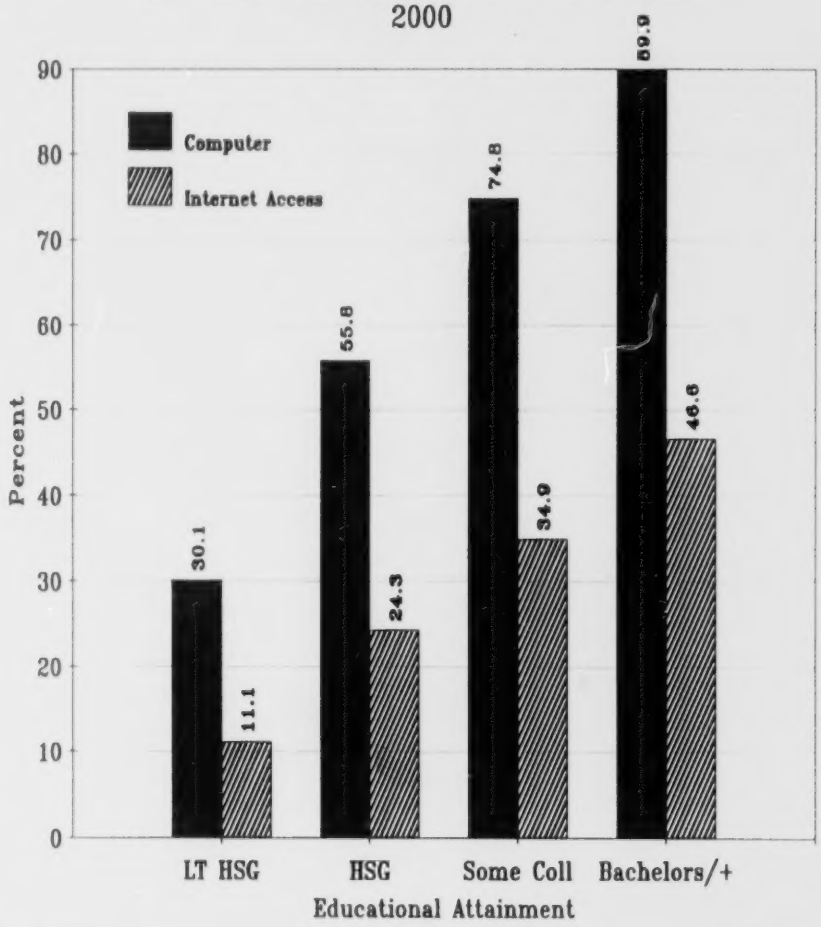
Educational attainment. Childrens' access to a home computer and internet use at home is also strongly linked to the educational attainment of the householder. (Because family income and educational attainment are so strongly bound together, we could expect no other result.)

In 2000 the proportion of children having computer access at home ranged from 30.1 percent for those where the householder was not a high school graduate, to 89.9 percent for children living in families where the householder had a bachelor's degree or more. Internet use at home was similarly skewed by the educational attainment of the householder. It ranged from 11.1 percent where the householder was not a high school graduate, to 46.6 percent where the householder held a bachelor's degree or more from college.

Age. Childrens' access to a computer at home and use of the internet thereon increases with the age of the child. Among children 3 to 5 years, 58.0 percent have a computer at home. By age 12 to 17 years, this increases to 69.5 percent. Even more dramatically, internet use increases with age, from 7.3 percent among children 3 to 5, to 24.7 percent by 6 to 11, and to 47.9 percent for children 12 to 17 years.

Sex. Boys and girls have nearly identical access to computers and the internet at home. 65.3 percent of the boys and 64.8 percent of the girls have access to computers at home. 30.2 percent of the boys and 30.6 percent of the girls use the internet on their home computers.

Access to a Home Computer and Internet Use at Home by Children 3 to 17 Years by Educational Attainment of Householder 2000

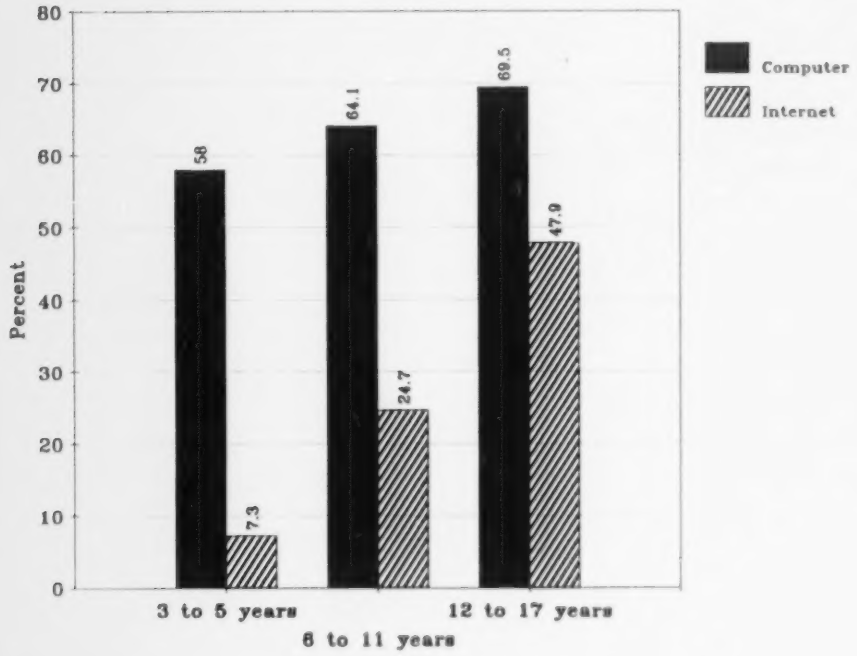


Source: Census Bureau

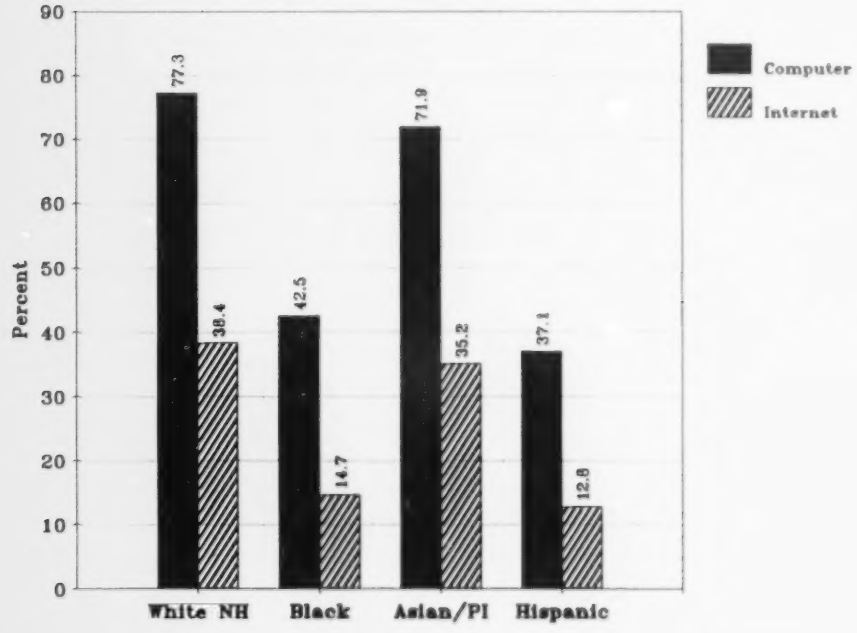
Race/ethnicity. Classified by race/ethnicity, white non-Hispanic children were most likely to have computers at home (77.3 percent), and use the internet at home (38.4 percent). Hispanic children were least likely to have a computer at home (37.1 percent) and to use the internet at home (12.8 percent). Asian/PI children trailed white non-Hispanic children slightly, and black children were only slightly more likely than Hispanic children to have computers and use the internet at home. (See chart on next page.)

Household type. About 72 percent of children live in married-couple families. These children were most likely to have computer access at home (73.6 percent) and use the internet on their home computer (35.1 percent). Another 23 percent of children live in female-only headed families. These children are least likely to have a computer at home (43.0 percent) and use the internet on

Access to a Home Computer and Internet Use at Home for Children 3 to 17 Years by Age 2000



Access to a Home Computer and Internet Use at Home for Children 3 to 17 Years by Race/Ethnicity 2000



that computer (17.8 percent). The remaining children live in male-only headed families (5 percent), or nonfamily households (1 percent). Their access to computers and the internet at home more closely resembles that of children in female-only headed households than married couple families.

Region. Children in the Northeast are most likely to have a computer at home (70.2 percent) and use the internet at home (35.5 percent). Children in the South are least likely to have a computer at home 60.9 percent) and use the internet on it (27.6 percent).

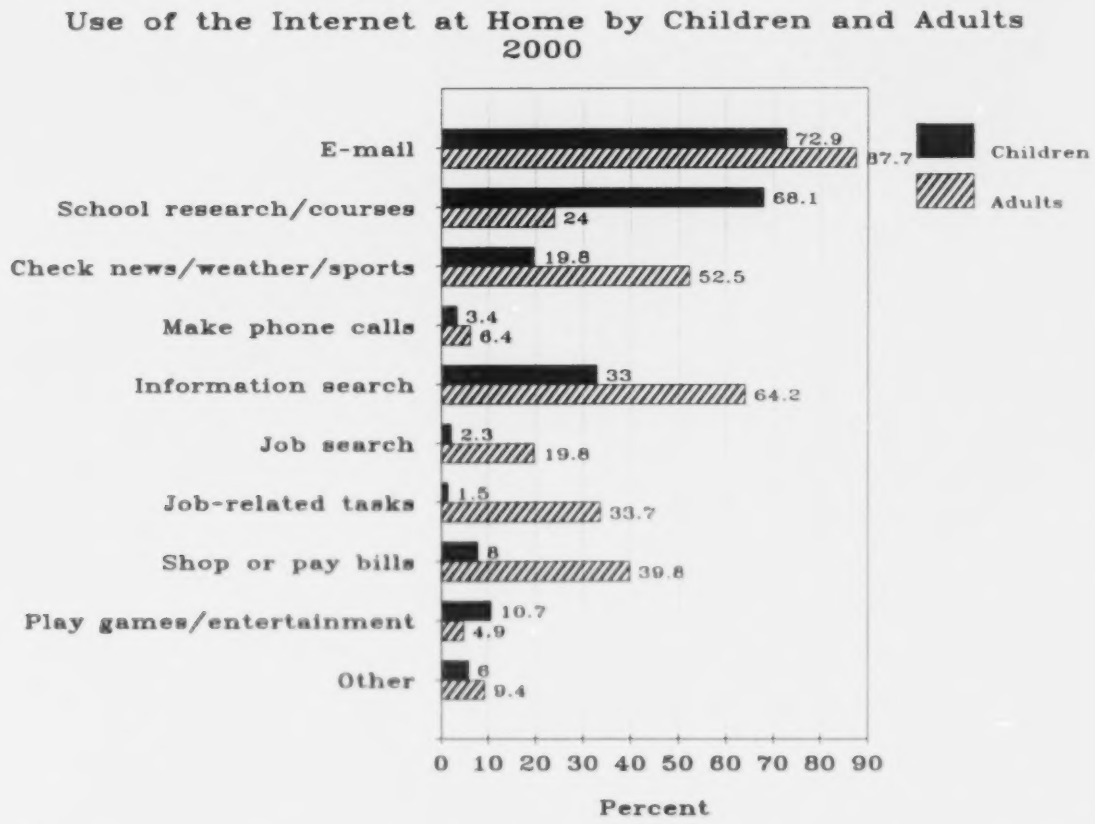
While *households* in the West are most likely to have computers and use the internet at home, the West ranks third among the four regions when it comes to providing this information technology to children living in families. Even the boring old Midwest is more likely than the West to have computers and internet access at home for children.

Metropolitan status. Children living in the suburbs of metropolitan areas are most likely to have computers at home (72.8 percent) and use the internet on them (34.7 percent). Children living inside central cities are least likely to have computers at home (53.4 percent) and use the internet at home (23.7 percent). This too differs somewhat with household date insofar as nonmetropolitan households were least likely to have computers and use them to access the internet.

Applications

Children and adults use the internet on their home computers in sometimes similar--and sometimes different--ways. As shown in the chart on the following page, both use the internet heavily for e-mail.

But beyond that uses differ. Children



are more likely than adults in their families to use the internet for school research or courses and to play games, entertainment and fun. Adults, on the other hand are more likely than their children to use the internet to check news, weather and sports, to search for information, for job search or job related tasks, and to shop or pay bills online.

Digital Divides

Our fundamental concern in this analysis has been the distribution of computers and internet access to children from different backgrounds, particularly those groups that are under-represented in higher education. These groups include: low income, first-generation, blacks, Hispanics, etc. Children may have access at home, or at school, or elsewhere (libraries, friends' homes, etc.).

As these data show, children have extraordinarily large differences in their access to computers and the internet at home. All of these differences appear to be related simply to family income--all of them.

But of those children who do not have access to computers at home, two-thirds still have access to computers at school. Only about ten percent of all school children do not have access to computers either at home or at school. Thus the Census data indicate that schools appear to be equalizing access to information technology.

But another report on *Internet Access in U.S. Public Schools and Classrooms: 1994-2000* prepared by the National Center for Education Statistics raises some interesting questions about the nature of internet access at school. For example:

- Census reports that in 2000 80 percent of school-age children do not have access to computers at school.
- NCES finds that in 2000 98 percent of all public schools have internet access.

Since computers are required to access and use the resources of the internet, either the 80 percent of school children who reportedly do not have access to computers at school must be too low, or the 98 percent of schools that reportedly have internet access must be too high. Or maybe students in schools with internet access do not provide that access to all of their students.

The school data is impressive. In nearly every way that schools are classified internet access is 96 percent or greater. But there is one exception. Schools where more than 75 percent

of the children are eligible for free or reduced-price school lunches report a 94 percent internet access rate. While this is the lowest rate reported, since 1994 the proportion of these schools reporting internet access has grown by the most, from 20 percent in 1994 to 94 percent by 2000.

The share of instructional rooms in public schools that have internet access was 77 percent in 2000, up from 3 percent in 1994. Again, the lowest internet access rate in instructional rooms was in 60 percent and this was in schools where more than 75 percent of the children were eligible for free or reduced-price school lunches.

Moreover, the ratio of instructional computers with internet access to students was highest in those schools with the largest share of children eligible for free or reduced price federal school lunches. These schools were also least likely to have dedicated telephone lines accessing the internet.

These data suggest that there are remaining qualitative differences buried in the gross measures of internet access in schools. Schools with the poorest students are least likely to have internet access, have the fewest instructional rooms with internet access, and have the most basic internet connections. They may also have the oldest equipment.

The picture from the schools is not perfect for under-represented students, but it is very, very good. Those least likely to have a computer and internet access at home are also least likely to have them in school too.

But the odds are far better at school than they are at home. Two-thirds of children without computers at home have them at school, where they are likely to be linked to the internet.

Simply enormous progress extending information technology opportunities has been made for all students between 1994 and 2000 in both homes and classrooms. The digital divides remain very real, especially for children from low income, first-generation, black and Hispanic children. But the direction of change remains positive for these groups.

Indeed schools do help level the playing field for students.

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Postsecondary Education
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The Mortenson Research Seminar on Public Policy Analysis of Opportunity for Postsecondary Education

Number 112 www.postsecondary.org October 2001

Family Income and Higher Education Opportunity 1970 to 2000

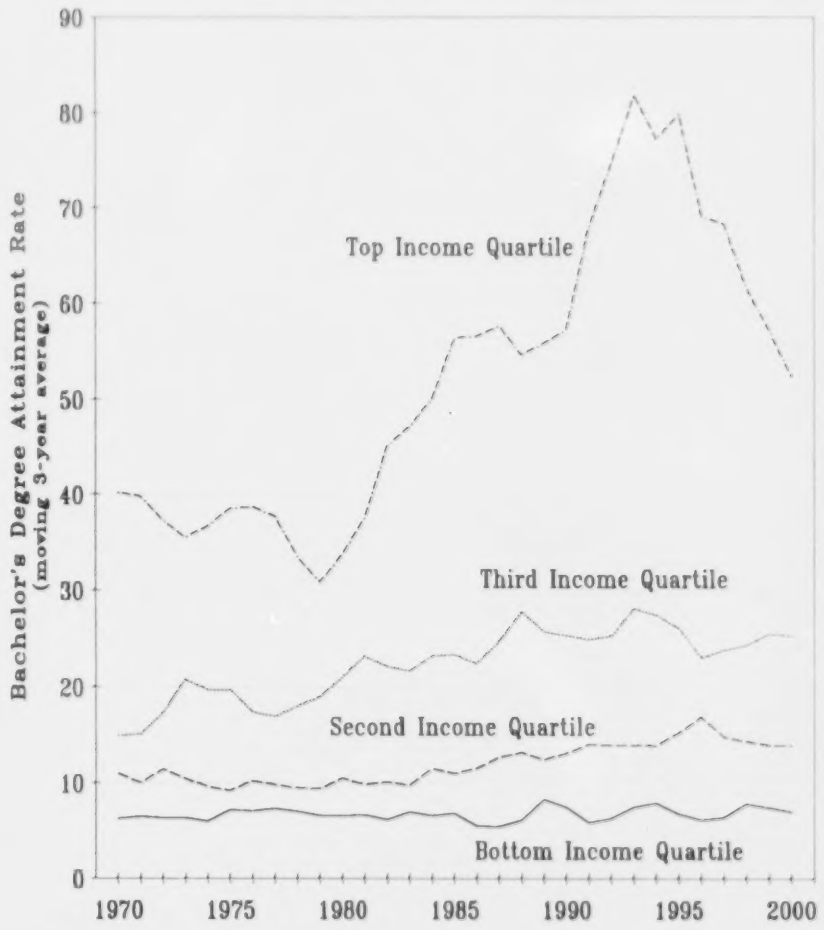
In the United States we largely determine who will graduate from college at birth.

- Children born into high income families with college educated parents are more likely than not to have a bachelor's degree by age 24.
- But only about one in twelve children born into low income families with parents who are not college educated will have a bachelor's degree by age 24.
- Those born into families with incomes between these extremes have chances for college that also vary directly with the income and educations of their parents.

Through public policy, programs and appropriations, we struggle mightily to re-level the playing field of educational opportunity.

- In federal programs we infuse additional resources into schools with concentrations of poor students. (The states, unfortunately, more than offset these equalizing investments with property tax financed K-12 education that makes public K-12 highly unequal for students from different family income backgrounds in most states.)
- Title IV of the Higher Education Act of 1965 created programs of outreach and financial aid that are targeted on students from the bottom half of the income distribution. (But the states, unfortunately, provide little in the way of need-based financial aid, preferring instead to focus state funding on institutions, and more recently on merit-based scholarship and tax-favored prepaid tuition programs.)

Estimated Baccalaureate Degree Attainment
by Age 24 by Family Income Quartile
1970 to 2000



Addressing the problem of unequal educational opportunity is vital to our success as individuals, as families, as communities and cities, as states and as a nation. Just as American

opportunity meant free land to our immigrant ancestors, today opportunity in America means getting a higher education to prepare for the abundant job opportunities available today.

In the Human Capital Economy that has developed over the last three decades, only those with postsecondary education or training qualify for the best paying jobs available in America. Those jobs finance the high living standards that nearly all of us seek in life. Those that try to engage in adult life without postsecondary education or training are relegated to the leftover jobs, at far lower pay, that the college graduates do not want. Lower pay means lower living standards.

While children cannot choose their parents, the public policy role of trying to level the playing field for children remains a more important role for government than it has ever been before. Higher education could be described as optional up to about 1973. But in the Human Capital Economy that has come to dominate economic growth and good employment during the last 30 years, who gets higher educated means who will have a life. The allocation of higher educational opportunity through public policy, programs and appropriations reflects our national commitment to including everyone--including poor children--in the American experience.

Here we analyze data mainly provided by the Census Bureau to see who gets college educated and who does not. We are particularly interested in the family income backgrounds of children because family income seems to so powerfully influence educational participation, performance and attainment. In a broad sense, this single measure of family income is also capturing other closely related influences on educational opportunity. Simply addressing this singular measure of limited family income in seeking to expand educational participation will accomplish little. But family income still is the most powerful single measure that distinguishes students in the educational pipeline moving toward college graduation. And as the data here reveal, family income usefully distinguishes student success in the pipeline over time as well.

The Data

The primary source of data used in this analysis is the Census Bureau's Current Population Survey (CPS). This monthly survey mainly gathers data on employment and unemployment from a national sample of about 50,000 American households. The data thus collected are limited to the civilian, noninstitutional population of the U.S. Excluded are those in the military, prisons and other institutional settings.

In October of each year, the education supplement to the CPS gathers data on school enrollment, including collegiate enrollment. The data from this education supplement are published by the Census Bureau in the P20 series of Current Population Reports. These reports are available online from the Census Bureau's website at:

http://www.census.gov/population/www/socdemo/school.html

The analysis reported here mainly relies on the data compiled in Table 14 of this report: "Enrollment Status of Dependent Primary Family Members 18 to 24 Years Old, by Family Income, Level of Enrollment, Type of School, Attendance Status, Sex, Race, and Hispanic Origin."

Data reported in this table are reworked (with substantial effort) into quartiles of family income of high school graduates. We have calculated these family income quartiles for each of the last 31 years, from 1970

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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through 2000. In October of 2000, the family income quartiles for dependent 18 to 24 year old high school graduates were as follows:

Bottom quartile:	$0 to $33,902
Second quartile:	$33,903 to $59,595
Third quartile:	$59,596 to $86,222
Top quartile:	above $86,222

Note that these are not constant dollar (inflation adjusted) income intervals. These are quartiles of family income of dependent 18 to 24 year old high school graduates. These income intervals reflect the broader redistribution of income that has been occurring for decades in the American population. For example, the upper income limit for the bottom three family income quartiles in constant 2000 dollars (thousands) are as follows:

Upper Income Limits of Quartiles in Constant 2000 Dollars

	1970	1980	1990	2000
Bottom	$23.0	$20.5	$29.7	$33.9
Second	$32.4	$30.2	$50.8	$59.6
Third	$43.4	$42.7	$82.0	$86.2

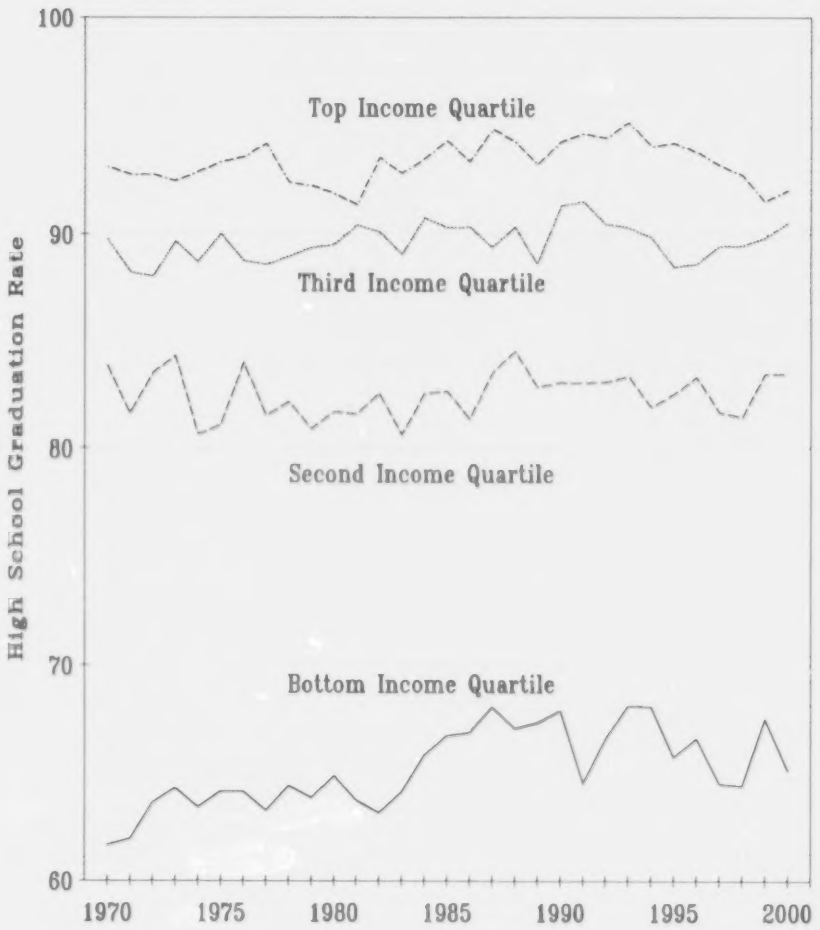
The progress of students through the education pipeline is calculated for each year and income quartile at three key transition points:

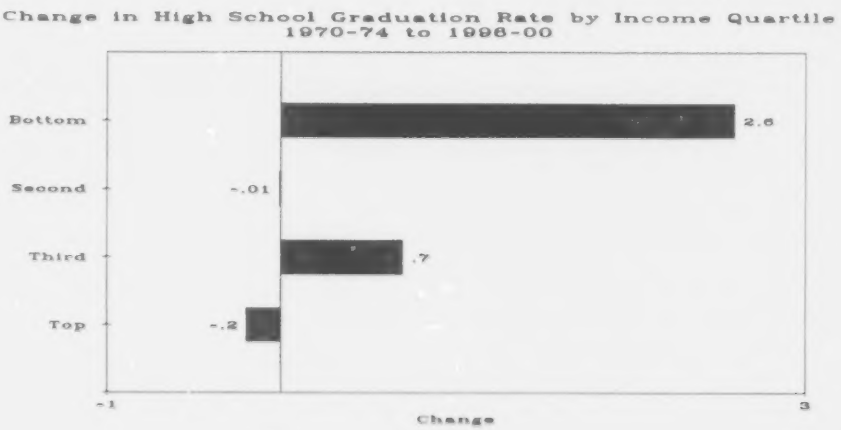
- High school graduation,
- College continuation for those who graduate from high school, and
- Bachelor's degree completion by age 24 for those who enroll in college

The product of these three rates is the proportion of each quartile that will have completed a bachelor's degree by age 24, which is shown in the chart on page 1.

Note that the proportion of those who start college and complete a bachelor's degree by age 24 is estimated. This estimation technique combines data from the annual CPS and the 1980 High School and Beyond file.

High School Graduation Rates by Family Income Quartiles for Dependent 18 to 24 Year Olds 1970 to 2000





High School Graduation

The Census Bureau counts as a high school graduate those who receive regular high school diplomas as well as those who complete equivalency certification, usually the GED. We think of GED recipients as high school dropouts who pass a test and we wish the Census Bureau would report these data separately. However, the Census Bureau has stood by this aggregation policy consistently for the 31 years of this time series, and thus the reported data are at least consistent.

In October 2000 there were 10,229,000 high school graduates among the population of 12,599,000 dependent 18 to 24 year olds for whom family income data were reported. Thus, 81.2 percent of this population were high school graduates by Census definition. The high school graduation rate for males was 78.0 percent and the rate for females was 85.1 percent.

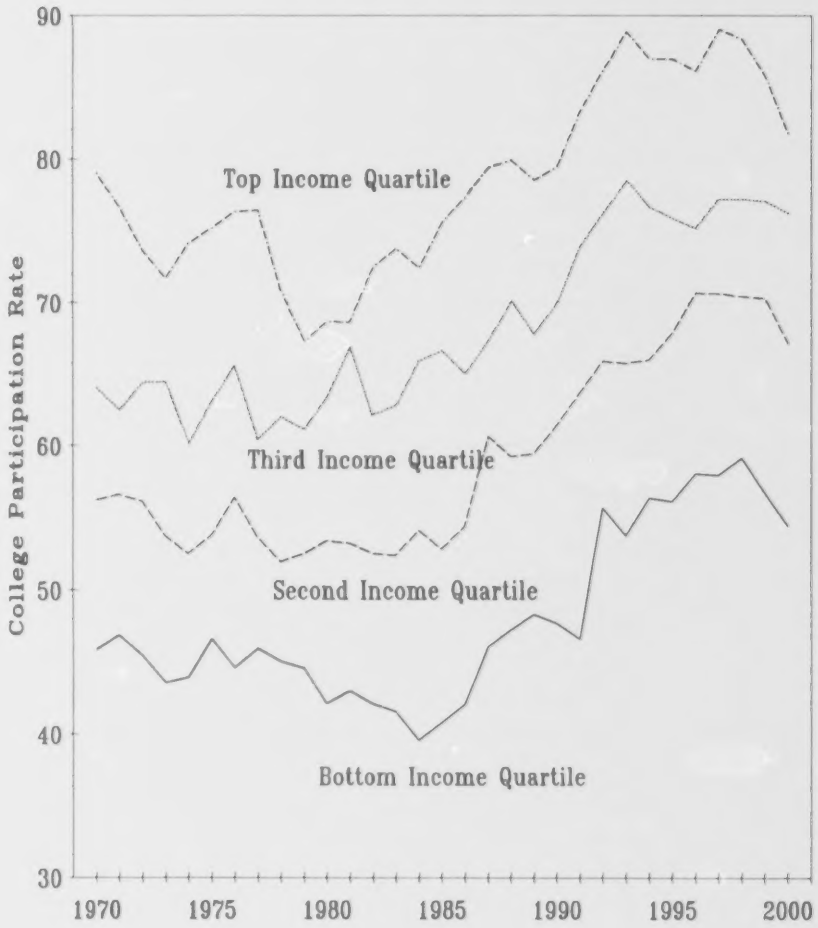
In October 2000 the high school graduation rates by family income quartile were:

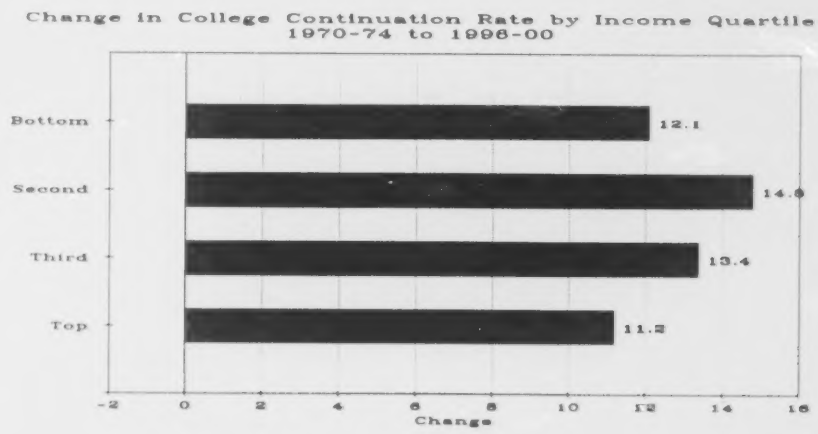
Bottom quartile:	65.1%
Second quartile:	83.4%
Third quartile:	90.5%
Top quartile:	92.0%

Here, at the first hurdle along the path to a college degree, the field is sorted out according to family income. High school graduation rates are highest in the top quartile of family income, and lowest--by far--in the bottom quartile of family income. Higher educational opportunity is already strongly influenced before the college years.

As shown in the charts on the previous page, there has been little trend up or down to these data at each income level over the last three decades. The bottom quartile has shown the largest change, a small 2.6 percent increase between 1970-74 and 1996-00. Other rates are largely unchanged.

College Continuation Rates by Family Income Quartiles for Dependent 18 to 24 Year Old High School Graduates 1970 to 2000





College Continuation

For those who graduate from high school, the college continuation rate by year and family income quartile is shown in the chart on the previous page. In October of 2000, 69.9 percent of those who had graduated from high school enrolled in college. The college continuation rate for males was 64.6 percent, compared to 75.6 percent for females. These were either currently enrolled in college, no longer enrolled but having completed 1 to 3 years of college, or no longer enrolled and having completed four years or more of college.

By income quartile, the October 2000 college continuation rates for those who had graduated from high school were:

Bottom quartile:	54.4%
Second quartile:	67.1%
Third quartile:	76.2%
Top quartile:	81.7%

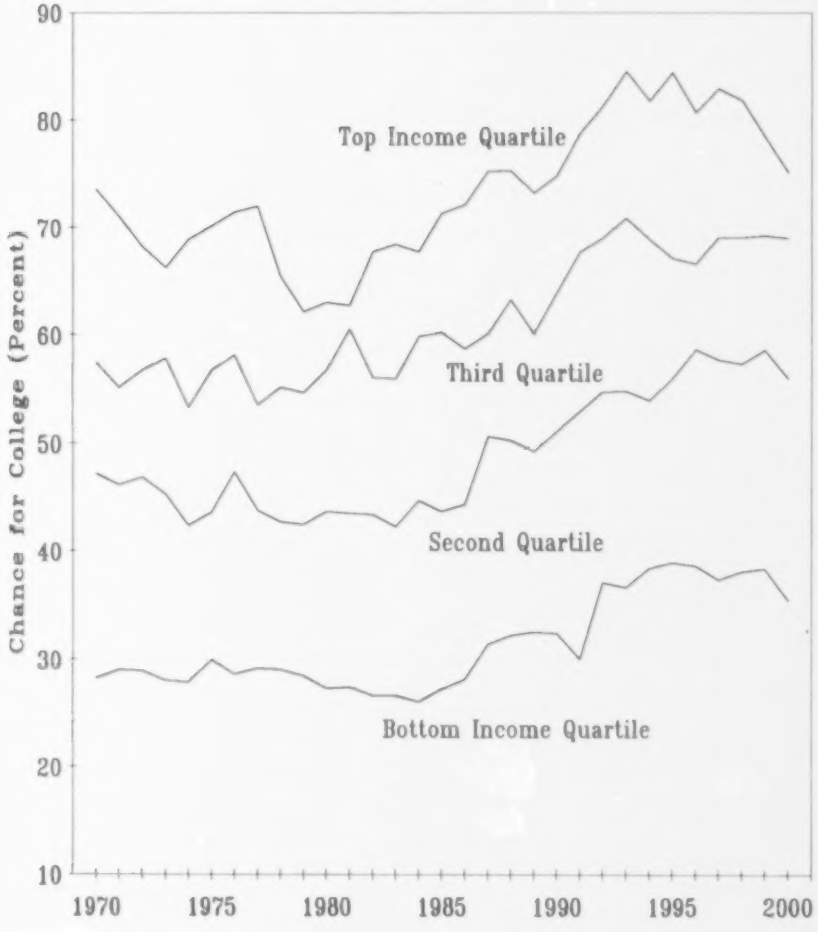
At this second hurdle on the path to the college degree by age 24, the field is further dispersed. Those from the bottom quartile of family income, who had the lowest high school graduation rate, also have the lowest college continuation rate for those that graduated from high school. Others from the top quartile of family income, who had the highest high school graduation rates, also have the highest college continuation rate for those who had graduated from high school. And so the gap widens further.

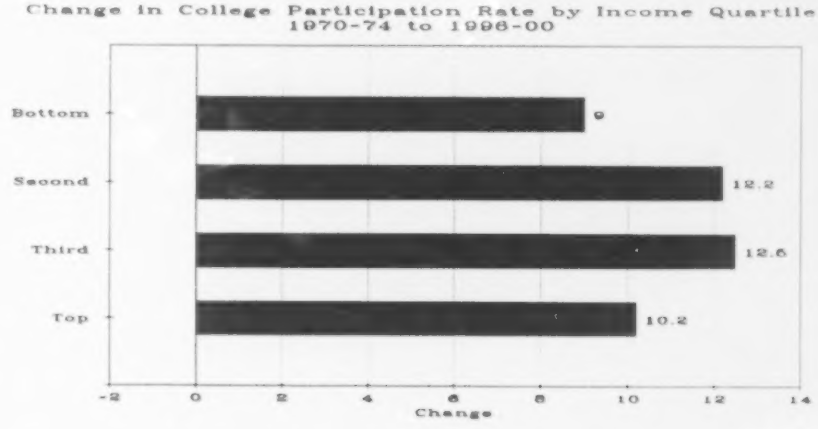
Significant growth in college continuation rates at all family income quartiles has occurred, but only since about 1980. However, the college continuation rates have declined for the last two years at all income quartiles.

College Participation

The college participation rate is the

College Participation for Dependent 18 to 24 Year Olds by Family Income Quartiles in the United States 1970 to 2000





product of the high school graduation rate and the college continuation rate. It is the proportion of the 18 to 24 year old dependent population that has reached college.

In October 2000 the college participation rate was 56.8 percent (81.2 percent high school graduation rate times 69.9 percent college continuation rate). For males the college participation rate was 50.4 percent, compared to 64.3 percent for females.

By family income quartiles, the college participation rates in October 2000 were:

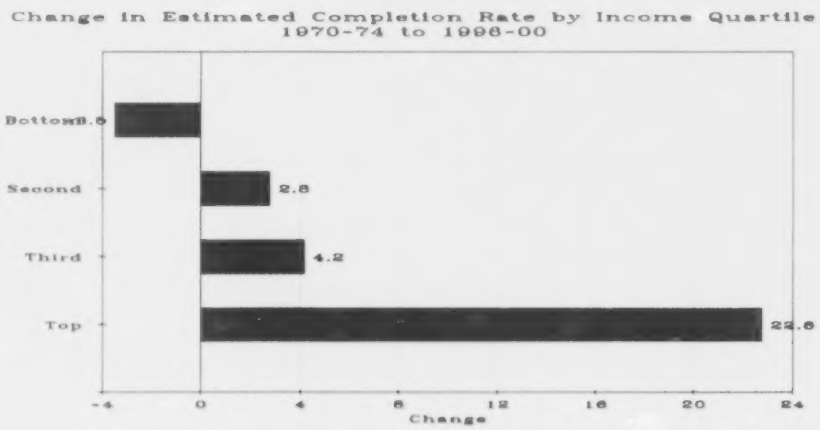
Bottom quartile:	35.4%
Second quartile:	56.0%
Third quartile:	69.0%
Top quartile:	75.2%

Here, after the first two hurdles on the path to a bachelor's degree from college, children born into the top quartile of family income are already more than twice as likely as are students from the bottom quartile to have reached college. The gap widens further. But the real difference occurs within higher education, as the data below clearly show.

Estimated Bachelor's Degree Completion

We estimate bachelor's degree completion by age 24 for those who start college by multiplying the proportion of those who start college and have completed four years or more of college and are no longer enrolled by a factor derived from the six-year follow-up to the 1980 cohort of freshmen who had graduated from High School and Beyond. This technique produces results that fluctuate from year to year and contain excessive statistical noise. Thus we report here a moving 3-year average of these calculated results to highlight underlying trends in the data over time.

Estimated Bachelor's Degree Completion Rates by Age 24 by Family Income Quartiles for Dependent College Students Who Began College, 1970 to 2000



In October 2000 we estimate that 35.3 percent of those that started college completed a bachelor's degree by age 24. By family income quartiles the estimated bachelor's degree attainment rate by age 24 for those that had enrolled in college was:

Bottom quartile:	19.5%
Second quartile:	24.9%
Third quartile:	36.7%
Top quartile:	69.6%

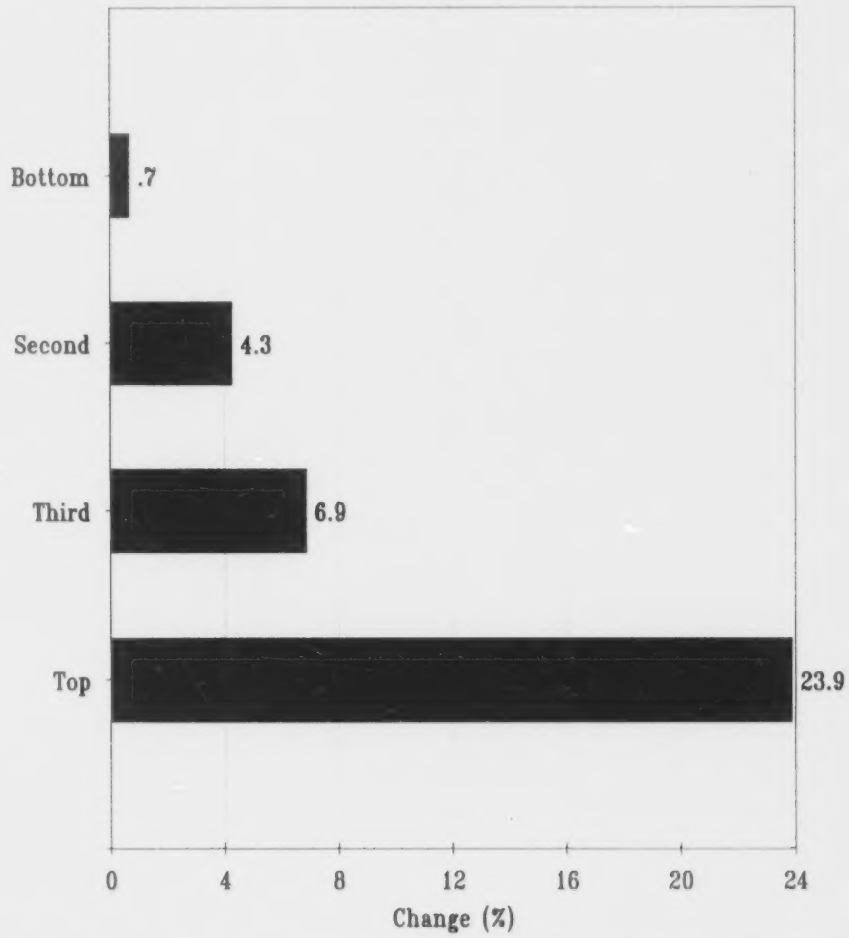
Here at the third hurdle along the path to a bachelor's degree, the field truly gets sorted out by family income. While only a fifth to a third of those who start college from the bottom three-quarters of the family income distribution complete a bachelor's degree by age 24, nearly 70 percent of those born into the top family income quartile manage to do so. The already wide gap has widened much further.

Moreover, during the last three decades the chance that a student from a low income family will complete a bachelor's degree has actually declined by 3.5 percent, particularly during the last two decades. During the 1970s their chances improved somewhat. But since about 1983 it has been mostly downhill for students born into the bottom quartile of the family income distribution.

In the two middle family income quartiles--roughly between $34,000 and $86,000--students who start college have made some modest gains in bachelor's degree completion by age 24. Their bachelor's degree completion rates have increased by 2.8 percent in the second quartile, and by 4.2 percent in the third quartile, between the early 1970s and the late 1990s.

But the real gains have occurred in the top quartile of family income. These are children born into families with incomes above about $86,000 in 2000. Here the bachelor's degree completion rate has exploded, from 54.3 percent in the early 1970s to 77.1 percent by the late 1990s--a staggering increase of 22.8 percent. Clearly the conditions for bachelor's degree completion have become most favorable to students born into the highest income families in America, particularly since about 1980.

Change in Estimated Bachelor's Degree Attainment Rate by Age 24 by Family Income Quartile 1970-74 to 1996-00



Estimated Bachelor's Degree Attainment

Our estimate of the proportion of the population of dependent 18 to 24 year olds that will have attained a bachelor's degree by age 24 is the simple mathematical product of the high school graduation rate, the college continuation rate and the estimated bachelor's degree completion rate. The results are shown in the chart on page 1 of this issue of OPPORTUNITY.

In October 2000 an estimated 20.0 percent of 24 year olds have completed a bachelor's degree (.812 x .699 x .353). This is 69 percent of the figure of 29.1 percent of 25 to 29 year olds reported by the Census Bureau to have a bachelor's degree. The difference may be attributable to

both bachelor's degrees awarded to independent students and to older students. The data and method used in this analysis do not permit the capture of data on bachelor's degrees awarded to independent and older students.

By quartiles of family income, the bachelor's degree attainment rate by age 24 for dependent family members in October 2000 was:

Bottom quartile:	6.9%
Second quartile:	13.9%
Third quartile:	25.3%
Top quartile:	52.3%

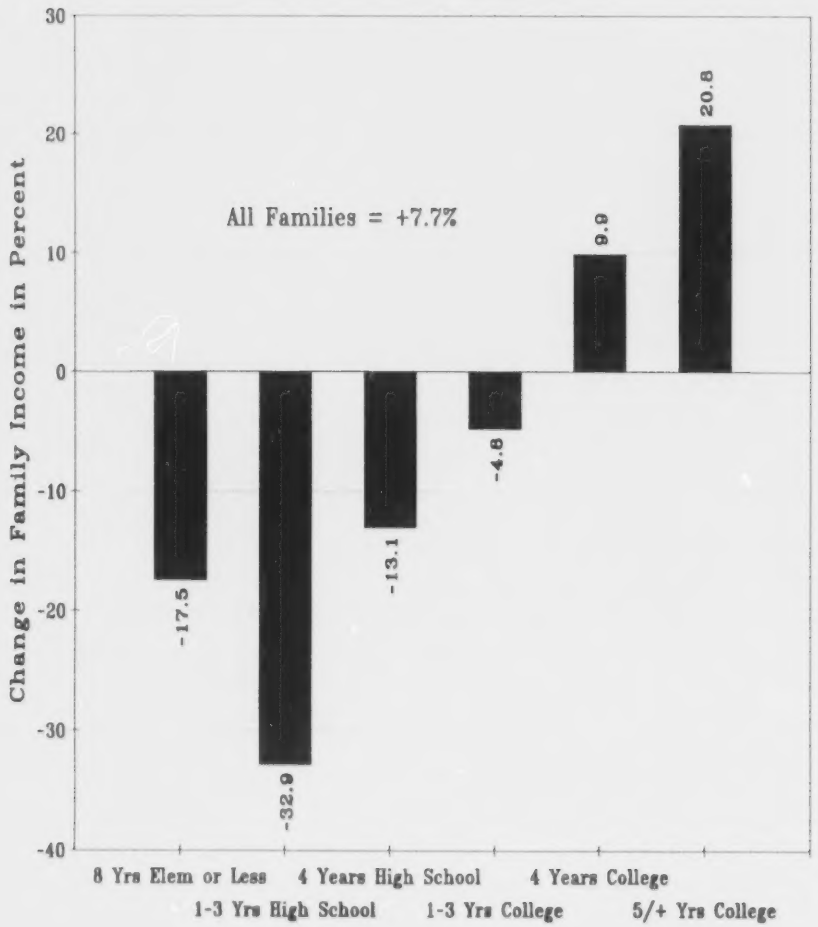
Here the gaps accumulated at each hurdle on the path to a bachelor's degree by age 24 are fully magnified.

- A student born into the second quartile of family income is twice as likely as is a student born into the lowest quartile of family income to have a bachelor's degree by age 24.
- A student born into the third quartile of family income is twice as likely as is a student born into the second quartile of family income to have completed a bachelor's degree by age 24.
- A student born into the top quartile of family income is twice as likely as is a student born into the third quartile to have completed a bachelor's degree by age 24.

With every quartile increase in family income, chances double for having a bachelor's degree by age 24.

Thus a student born into the top quartile of family income is about 8 times as likely as is a student from the bottom quartile to have completed a bachelor's degree by age 24. Such are the consequences of accidents of birth regarding higher educational opportunity and attainment in the United States in 2000.

Change in Median Family Income
by Educational Attainment of Householder
Between 1973 and 1999



Issue #1: Rich Kids

These data portray a set of disturbing trends regarding educational progress for children born into the top quartile of family income. This is the quartile that feeds (in several ways) public and private four-year colleges and universities. The troubling trends are:

- The high school graduation rate for this quartile peaked at 95.1 percent in 1993 and has declined almost steadily since then to 92.0 percent by 2000.
- The college continuation rate for this quartile peaked 89.7 percent in 1995 and has since declined to 81.7 percent by 2000.
- The bachelor's degree completion rate for this quartile peaked at 96.8 percent in 1993 and has since declined to 69.6 percent.
- As a result of the above three trends, the bachelor's degree attainment rate by age 24 for this income quartile has declined from a peak of 81.8 percent in 1993 to 52.3 percent by 2000.

Clearly, a growing share of students from the highest income families are having trouble staying focused on education. They are born into (do not earn) privilege. At every hurdle on the path to a bachelor's degree their inherited advantages are apparent. Yet

a growing share are turning away from high school, from continuing their educations in college, and in completing bachelor's degrees by age 24.

Their diminishing participation in the educational system has been masked by the steady growth in the numbers of high school graduates available for college enrollment since the early 1990s. Colleges have more students to choose from, and thus the diminishing participation of the bread-and-butter of four-year college enrollment is not a pressing institutional problem. This could explain, in part, the shift in institutionally awarded student financial aid dollars up the income scale away from the most needy to the less needy or not quite needy as institutions lose participation from the top family income quartile.

On the one hand its hard to cry real tears for rich kids who choose not to participate in the educational opportunities more readily available to them than they are to other students from lower family income backgrounds. On the other hand we all lose when they fail to do so. Its a problem for the students, for institutions, and for the rest of us who see clearly the importance of higher education. Perhaps a souring economy will bring them to their senses. Further data may provide some answers to this oddity in the currently available data.

Issue #2: Everyone Else

The powerful economic stratification of educational participation and attainment shown clearly in these data reminds us of the economic slavery of feudal Europe and Asia. Our peasant ancestors did not own land, then the key to economic welfare. Without land they lacked political influence, access to education, religious freedom, and just about everything that the ruling classes enjoyed.

Most of our ancestors came to this country because of the economic opportunities available here that were not available in their native lands. For some, the promise of farm land ownership here was enough to draw them to America. Life in the United States offered opportunities that Europe, Asia and other lands did not.

In these feudal systems peasants or serfs were economic slaves to the wealthy and landed ruling classes. There was neither economic, nor educational, nor political nor any other form of social opportunity for those born into the unlucky lowest classes.

Now the United States has created the Human Capital Economy. Since the early 1970s economic opportunity has become increasingly tied to higher educational attainment. Those with college educations are seeing real gains in their incomes and the living standards that their incomes support. They are experiencing disproportionate political influence. They have choices in their lives that define quality of life. Those with high school educations or less are experiencing real declines in their incomes and living standards. Life is increasingly brutal for them.

In the Human Capital Economy, those who get a college education can and do engage in the full range of opportunities available. Those who do not get a college education get what is left over, which is often not much. In the Human Capital Economy, economic reward is based on productivity, and those with college educations can and do produce more than those without college educations, and they are rewarded accordingly.

Generally, more education leads to greater economic stability and security, more prestigious employment, better access to health care, less dependency on government assistance, longer lifespans, better dietary and health practices, healthier children, greater use of seat belts, more continuing education, greater computer ownership and internet access, greater attendance at live performances, greater participation in leisure and artistic activities, more book purchases, better academic performance of children, higher voting rates, greater knowledge of government, greater community service, more volunteer work, greater tolerance of unconventional literature, greater community leadership, and less criminal activity and incarceration.

But those without college educations are left out of much of this American opportunity. They are increasingly disengaged from the labor force, from family life and from civic life.

What they are too often engaged in is criminal activity (for men) and welfare (for women, especially with children).

- The 2000 year-end incarceration rate in the United States stood at 699 per 100,000 population, the highest it had ever been. This rate was higher than that of any other country in the world, ever. One in every 143 residents was incarcerated in state or federal prison or a local jail. More than 93 percent of all prisoners were men.
- Welfare is not entirely a female problem, but women are far more likely than men to be on welfare.

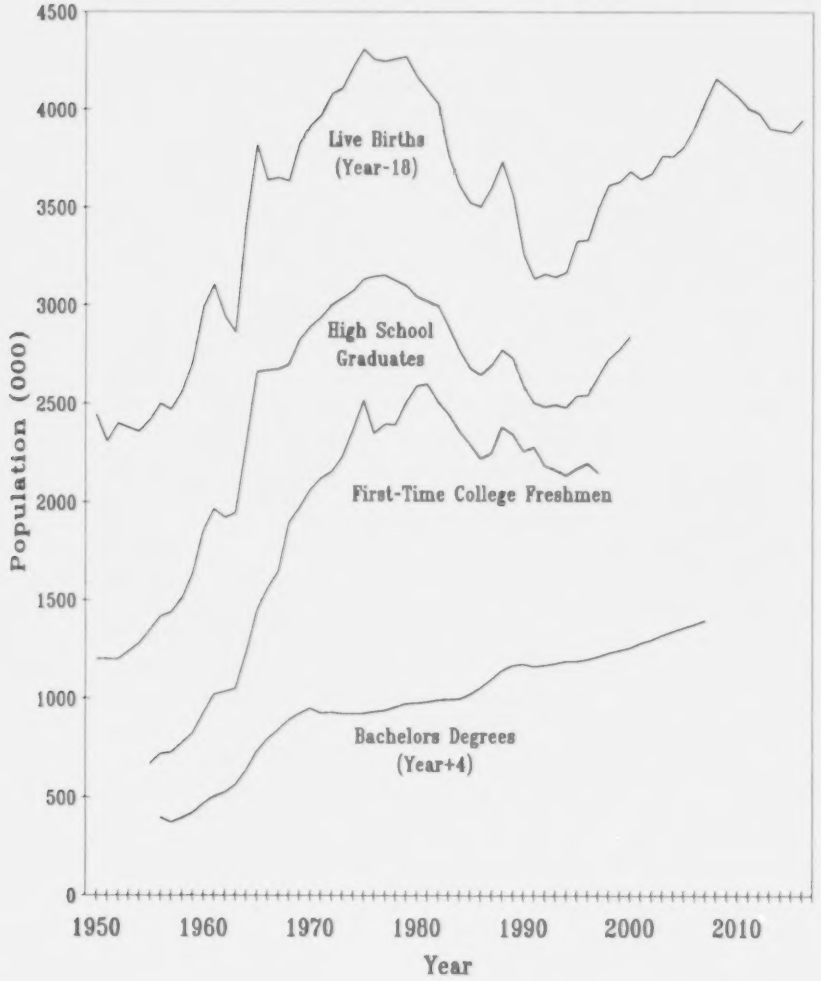
For about the last two decades our leadership has made shortsighted and selfish policy choices at the federal, state and institutional levels. These choices erode social bonds and weaken social fabrics. These choices diminish our collective future. As higher education opportunity is reallocated through perverse tax credits, merit scholarships and tax favored college savings programs, the social gaps widen. This makes higher education the problem, not the solution.

Demographics of Undergraduate Education

There is no great mystery about where undergraduate college enrollments come from. They are born, nearly all enroll in school, most graduate from high school, many of these enter college, and a few of these actually graduate from college. This is the education pipeline that demographers monitor at key points to anticipate future student demand for high education.

This basic pipeline model of undergraduate enrollment in higher education may be applied equally well to men and women, to whites, blacks and Hispanics (or any other measurable group) or to any state or geographic region. It is based quite simply on the predictable flow of students from live births, into and through K-12 education to high school graduation, and into and through colleges and universities to graduation from college.

Demographics of Undergraduate Higher Education
1950 to 2016



The steps involved in measuring and monitoring this flow of young people may be cohort survival, transition rates, or more elaborate multivariate regression models.

The value of this simple model is that it offers valuable insights into the size, location and characteristics of college enrollments over the next twenty years. When set up in forecasting models, it permits the study of alternative "what if" scenarios.

- What if only female college participation rates continue to grow and male participation remains stagnant?
- What if Hispanics suddenly catch fire and their high school graduation rates catch up to the national average?
- What if federal, state and institutional policy makers took seriously their responsibility to remove financial barriers to higher education?
- What if black males caught up to black women in bachelor's degree attainment?

Here are some of the major pieces of the education pipeline.

Live Births

Eighteen years before high school graduation and college matriculation occur, the babies are born. As shown in the chart on this page, live births increased from a low of 2.3 million in 1933, to a peak of 4.3 million in 1957, then dropped off to 3.1 million in 1973, then resumed growth to 4.2 million in 1990, then resumed decline to 3.9 million in 1996 and 1997. This is the famous "pig-in-a-python" phenomenon of the post World War II baby boom, followed by a baby bust, followed by the echo of the baby boom as the post World War II babies start their own families.

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High School Graduates

Eighteen years after babies are born, about three quarters of them become regular high school graduates. Of the 4,027,000 babies born in 1982, 2,839,000 became high school graduates in 1999-2000. About 70 percent of babies become regular high school graduates by age 18.

The National Center for Education Statistics has projected public high school graduates by state through 2011. The national total is projected to increase by 11.1 percent between 1999 and 2011. However, this projection applies to only one state (New Hampshire). As the chart on this page shows, the number of public high school graduates will increase in 28 states and decrease in 23 states.

First-Time College Freshmen

About 82 percent of regular high school graduates become first-time college freshmen. In 1997 out of 2,634,000, public and private high school graduates, 2,147,000 became first time college freshmen.

Here the calculation begins to get fuzzy. Not all first-time college freshmen enter college immediately following high school graduation. Indeed, some may show up in college with a GED and never have completed regular high school graduation requirements. Despite this growing blurriness to the relationship of the data, the chart on this page shows a clear linkage between the annual crop of high school graduates and first-time college freshmen.

Bachelor's Degrees Awarded

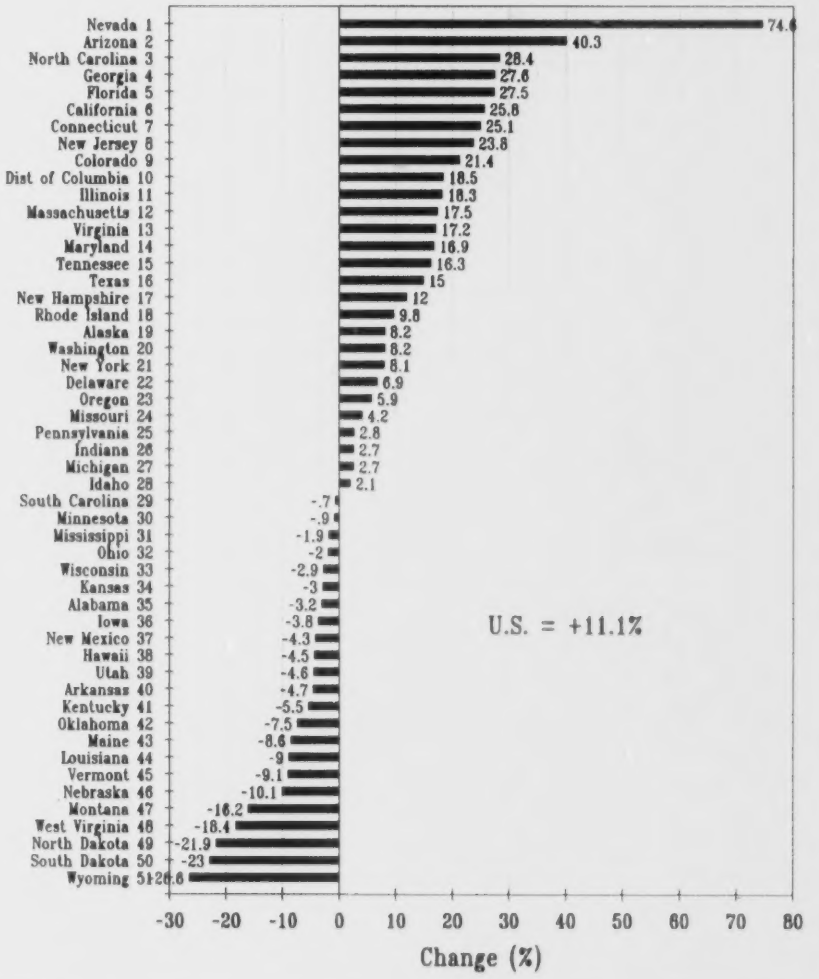
Some four or more years after college matriculation, many students begin completing their bachelor's degrees and graduate from college. Here the time link between college matriculation and graduation gets very blurry. A declining share of bachelor's degrees are awarded four years after high school graduation and college entrance.

By age 25 to 29 years, about 50 percent of those who have entered college will have completed a bachelor's degree. Another 15 percent will have completed an associate degree.

Of course data can be arrayed in the above manner for most definable groups of the population. This is especially important for the study of populations that are underrepresented in higher education, such as low income, males and Hispanics. What if scenarios provide insights into future student demand for higher education.

This information also denies to policy makers the excuse that they did not know what was going to happen. With reasonable clarity, we know what is going to happen to student demand for higher education for the next two decades because these children have already been born. Whether policy makers act on this information is another matter.

Public High School Graduate Projections by State 1999 to 2011



College Participation Rates by State for Students from Low Income Families 1993 to 2000

Reaching college is a special challenge for students from low income families. Their high school graduation rates are far below those of students from higher income families. For those who graduate from high school, their college continuation rates are well below the rates of their peers from higher family income backgrounds. As a result, their participation rates (the product of high school graduation rates and college continuation rates) fall far below those of others from higher income families.

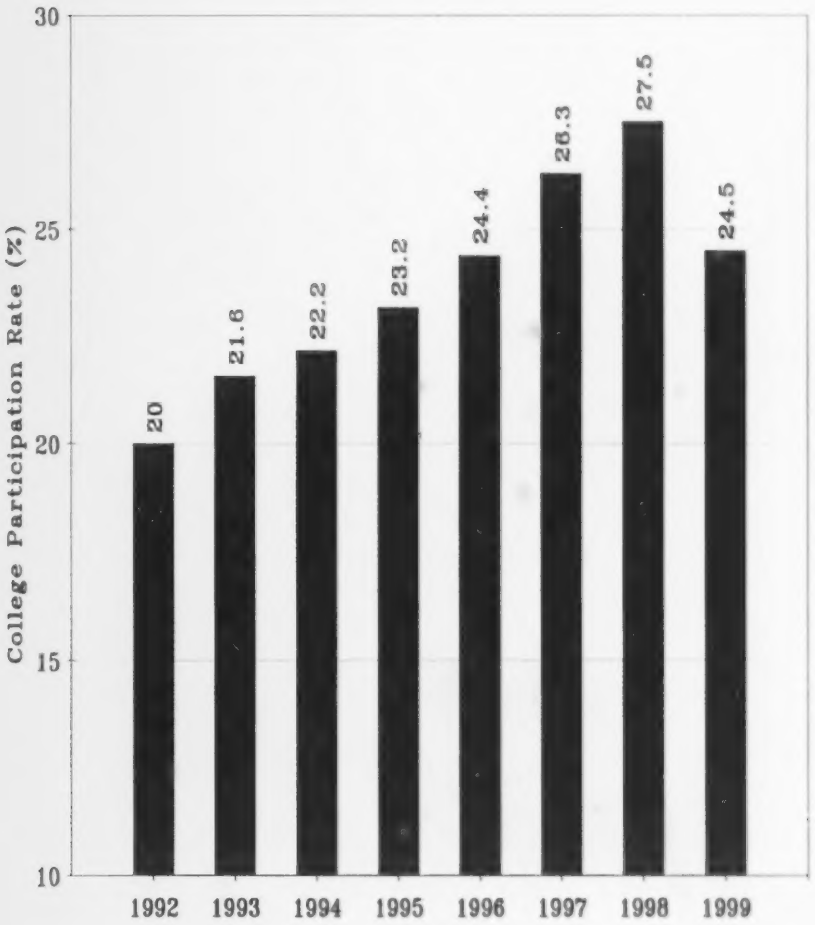
The special challenge to policy analysis is to disaggregate national data collected in the Census Bureau's Current Population Survey to the state level. The CPS is based on a national sample of about 50,000 households, and thus does not provide sufficient sample size to prepare reliable estimates of low income participation in college at the state level.

Thus we have sought alternative state-level data to construct estimates of college participation by low income students for each state. Conceptually this is straightforward: we need comparably defined low income counts of students enrolled in higher education from each state for the numerator. Then we need comparably defined low income counts of the total number of low income students in the market population in each state for the denominator.

For several years we have tested a model that uses dependent Pell Grant recipient data by state of residence for the numerator, and school children in grades 4 to 9 nine years earlier approved for free or reduced-price school lunches by state in the denominator.

These data are compiled by state in unpublished federal Pell Grant and National School Lunch program reports. They are available by state and year. They are roughly comparable. And when aggregated to the national level, they produce college participation rates that are similar to data reported by the Census Bureau from the Current Population Survey. Thus we are reasonably confident that the picture described here of low income participation in higher education is accurate at the state level.

College Participation Rates for Students from Low Income Families 1992 to 1999



The Data

The data used in this analysis is not

published. It is compiled by two federal agencies that administer relevant federal programs and is available on request from those agencies.

The data on dependent Pell Grant recipients by state of residence is used to measure the number of children from low income families that are enrolled in higher education. The data are available from Steve Carter at the U.S. Department of Education (Steve.Carter@ed.gov).

These data have several characteristics that make them especially valuable for this analysis. First, they are uniformly defined, collected and reported across all states. Second, they are defined by state of residence of the Pell Grant recipient, not the state where the institution attended is located. Third, as dependent students, family income means parental income and these are students in the 18 to 24 year old age range. Fourth, they are available for each year since the late 1970s.

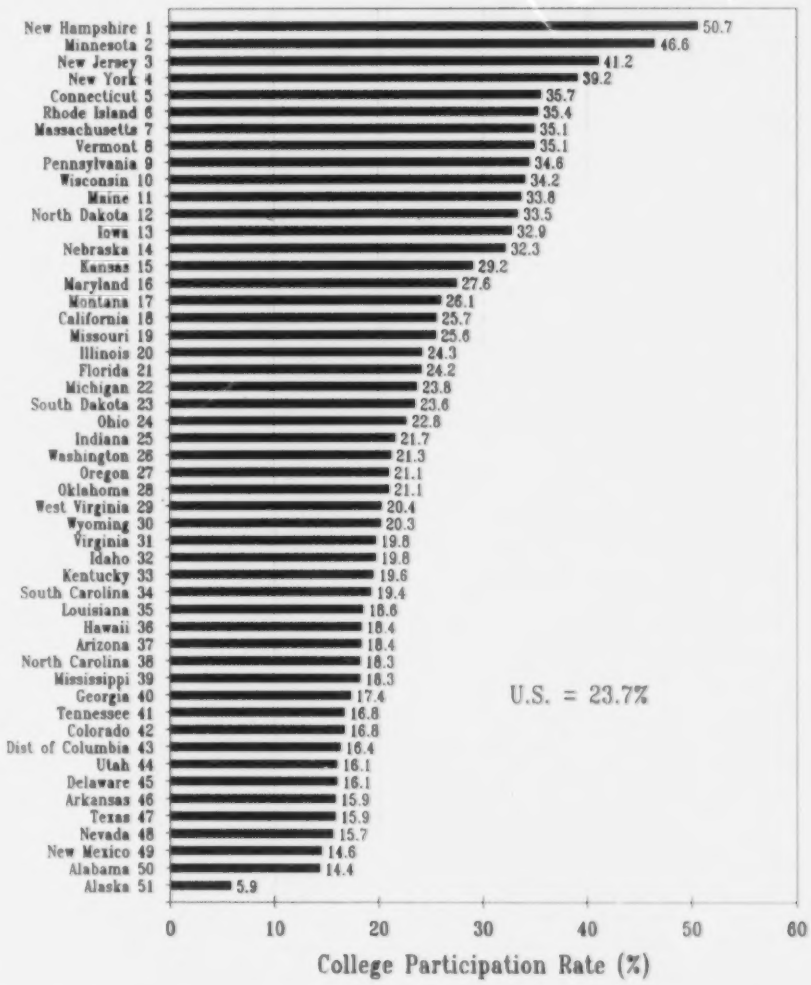
The state-level data on the numbers of school children approved for free or reduced-price school lunches under the National School Lunch Program is collected by the Child Nutrition Service of the U.S. Department of Agriculture. We have been supplied these data by Jeffrey Derr with a special tabulation available for downloading from our website (under Spreadsheets).

The core data are the percent of all K-12 school children in each state approved for free or reduced-price school lunches. To be eligible for free school lunches, family income must fall below 130 percent of the federal poverty level. To be eligible for reduced-price school lunches, family income must fall below 185 percent of the federal poverty level. We apply this proportion to the numbers of public school enrollments in fourth through ninth grades, as reported in the *Digest of Education Statistics*. The result becomes the denominator for the calculation.

We have compiled the Pell Grant recipient data and approved school lunch data by state in a large Excel spreadsheet available on our website. www.postsecondary.org, on the Spreadsheets page.

College Participation for Students from Low Income Families

Average of State Rates 1992 through 1999



Trends

The chart on page 12 shows the college participation rate for students from low income families for the years between (fall) 1992 and 1999. The college participation rate rose steadily and substantially throughout most of the 1990s, from 20.0 percent in 1992 to a peak of 27.5 percent in 1998.

However, in 1999 this trend reversed and the college participation rate dropped sharply, to 24.5 percent. Review of the data indicates that this drop was caused by the sharp reduction in the number of dependent Pell Grant recipients during the 1999-2000 academic year.

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Patterns

The chart on page 13 shows the college participation rates for students from low income families by state. Here we average the annual rates for the eight years from 1992 through 1999.

These rates range from 5.9 percent in **Alaska** to 50.7 percent in **New Hampshire**.

The geographic pattern is that college participation rates for students from low income families are generally highest in the northern states. The top 17 states are all northern states. Similarly, most of the states near the bottom of this ranking are southern states.

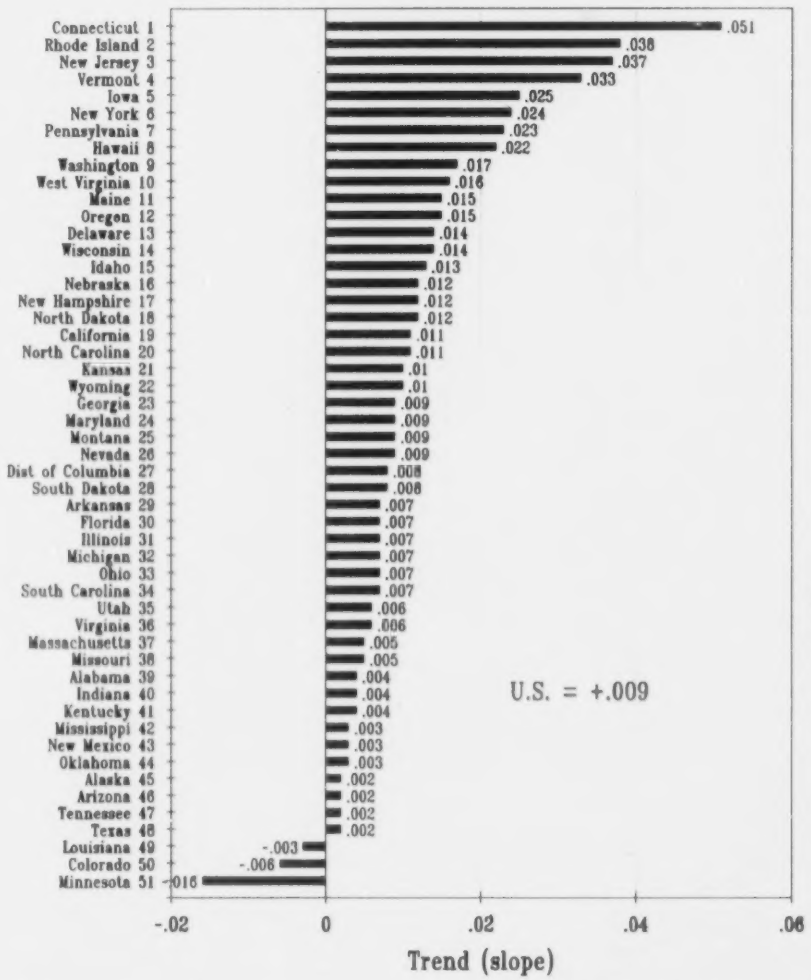
Trends and Patterns

The chart on this page shows the trend to the data in each state over the eight years between 1992 and 1999. The trend is measured as the slope of the regression line through the eight data observations. A positive number indicates improvement in the college participation rate for students from low income families, and a higher number indicates greater improvement over the eight year period. A negative number indicates that participation rates have declined over the last eight years (although Minnesota's case appears to be caused by questionable data).

The states with the greatest improvement in college participation for low income are all in the northeast: **Connecticut, Rhode Island, New Jersey** and **Vermont**.

Only two states have negative trends: **Colorado** and **Louisiana**. Colorado has recently created a program targeted on low income students to expand their participation in higher education. The program is small and new, and it is too soon to see how

Trend in College Participation Rates for Students from Low Income Families, 1992 through 1999



well it may be working. Louisiana, on the other hand, recently dropped its need-based grant program in favor of a non-need-based scholarship program, so it is unclear that Louisiana is aware or even cares about higher education participation for its low income population.

Issues

The same data used in this analysis to measure the presence of low income students in K-12 education has another purpose. These data can be used to anticipate the needs in each state for financial aid targeted on low income students to enable them to pay college attendance costs when the time comes.

Overall, and in most states, the proportion of K-12 school children receiving subsidized school lunches through the National School Lunch Program is growing. In the national data, the proportion of K-12 enrollment with family incomes below 185 percent of the federal poverty level increased from 37.4 percent in 1992 to 40.3 percent by 1999.

- The good news is that the proportion of K-12 enrollments

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College Participation Rates for Students from Low Income Families by State

1992-93 to 1999-2000

	Fall of:									*Trend*
State	1992	1993	1994	1995	1996	1997	1998	1999	Mean	(slope)
Alabama	13.6%	15.4%	13.6%	11.5%	13.1%	15.5%	16.5%	15.9%	14.4%	0.004
Alaska	4.5%	5.5%	6.5%	5.4%	5.5%	6.6%	7.3%	6.1%	5.9%	0.002
Arizona	16.3%	14.3%	23.3%	18.5%	20.0%	19.1%	18.3%	17.0%	18.4%	0.002
Arkansas	16.0%	13.6%	14.0%	14.6%	14.8%	16.0%	20.0%	18.4%	15.9%	0.007
California	16.5%	24.1%	25.3%	28.4%	30.0%	28.1%	28.4%	25.1%	25.7%	0.011
Colorado	16.4%	21.8%	18.9%	14.0%	15.8%	16.4%	17.3%	13.7%	16.8%	-0.006
Connecticut	17.2%	25.1%	24.3%	31.8%	30.1%	51.3%	73.3%	32.3%	35.7%	0.051
Delaware	14.1%	12.4%	11.1%	10.4%	21.9%	18.3%	17.0%	23.3%	16.1%	0.014
District of Columbia	12.2%	12.3%	13.0%	20.6%	19.4%	20.3%	18.4%	14.8%	16.4%	0.008
Florida	20.7%	20.0%	23.0%	27.7%	26.4%	25.0%	27.9%	22.9%	24.2%	0.007
Georgia	13.1%	15.3%	14.6%	18.3%	19.0%	20.9%	19.9%	17.7%	17.4%	0.009
Hawaii	9.0%	15.0%	14.2%	16.1%	22.9%	21.4%	23.6%	25.4%	18.4%	0.022
Idaho	16.4%	16.6%	17.5%	15.3%	19.6%	25.0%	26.9%	21.0%	19.8%	0.013
Illinois	23.4%	22.2%	20.5%	24.3%	23.2%	27.5%	28.6%	24.5%	24.3%	0.007
Indiana	18.9%	21.1%	21.6%	19.6%	22.9%	27.4%	21.4%	20.8%	21.7%	0.004
Iowa	26.9%	28.6%	22.8%	31.7%	28.2%	45.4%	42.2%	37.7%	32.9%	0.025
Kansas	24.5%	29.0%	22.2%	27.4%	33.6%	38.6%	29.7%	28.6%	29.2%	0.01
Kentucky	20.0%	17.8%	17.2%	18.7%	19.8%	20.5%	22.8%	20.1%	19.6%	0.004
Louisiana	18.7%	19.2%	22.1%	18.1%	16.0%	18.3%	18.9%	17.8%	18.6%	-0.003
Maine	26.4%	27.7%	31.9%	38.8%	35.5%	33.3%	43.9%	33.3%	33.8%	0.015
Maryland	23.9%	25.4%	26.3%	26.4%	28.7%	29.0%	32.9%	28.0%	27.6%	0.009
Massachusetts	32.0%	33.0%	32.7%	34.0%	40.0%	40.0%	39.3%	29.9%	35.1%	0.005
Michigan	21.6%	21.2%	22.4%	22.2%	26.0%	27.7%	26.5%	23.0%	23.8%	0.007
Minnesota	48.4%	63.3%	42.4%	41.4%	45.8%	44.8%	47.5%	38.8%	46.6%	-0.016
Mississippi	17.4%	18.1%	17.7%	16.5%	18.5%	17.7%	22.0%	18.2%	18.3%	0.003
Missouri	23.6%	25.1%	25.2%	23.6%	24.4%	28.0%	29.0%	25.7%	25.6%	0.005
Montana	23.8%	25.4%	23.3%	23.4%	23.9%	31.2%	30.5%	27.3%	26.1%	0.009
Nebraska	29.5%	30.9%	26.5%	29.2%	33.9%	39.3%	31.9%	37.2%	32.3%	0.012
Nevada	15.4%	12.6%	9.2%	17.5%	14.6%	20.0%	18.8%	17.4%	15.7%	0.009
New Hampshire	33.3%	41.3%	47.6%	79.8%	63.7%	47.6%	43.6%	48.5%	50.7%	0.012
New Jersey	24.5%	30.1%	37.7%	37.6%	43.5%	62.8%	50.2%	43.0%	41.2%	0.037
New Mexico	12.3%	15.4%	15.6%	13.1%	14.7%	13.1%	17.0%	15.3%	14.6%	0.003
New York	29.6%	32.4%	33.4%	42.0%	40.6%	45.3%	49.5%	40.9%	39.2%	0.024
North Carolina	15.2%	16.2%	16.4%	16.3%	17.7%	20.8%	22.9%	21.2%	18.3%	0.011
North Dakota	33.0%	28.1%	26.2%	31.3%	37.1%	39.9%	39.1%	32.9%	33.5%	0.012
Ohio	22.0%	21.4%	21.5%	20.7%	21.3%	23.3%	28.3%	24.2%	22.8%	0.007
Oklahoma	19.5%	23.3%	19.1%	21.3%	19.3%	19.9%	24.1%	22.0%	21.1%	0.003
Oregon	14.3%	19.6%	20.6%	20.1%	17.7%	25.2%	23.7%	27.4%	21.1%	0.015
Pennsylvania	24.0%	23.7%	35.0%	37.5%	37.3%	40.7%	41.7%	36.6%	34.6%	0.023
Rhode Island	18.3%	23.8%	34.2%	35.0%	42.3%	36.1%	52.0%	41.8%	35.4%	0.038
South Carolina	15.3%	18.5%	20.2%	17.8%	20.3%	21.7%	20.7%	20.9%	19.4%	0.007
South Dakota	21.5%	24.4%	19.9%	20.3%	22.4%	25.9%	28.7%	25.5%	23.6%	0.008
Tennessee	16.5%	17.4%	15.8%	14.9%	16.9%	17.0%	17.5%	18.1%	16.8%	0.002
Texas	16.5%	15.6%	15.4%	14.7%	15.2%	15.5%	16.8%	17.4%	15.9%	0.002
Utah	13.8%	17.0%	16.1%	12.9%	15.3%	15.8%	19.9%	18.2%	16.1%	0.006
Vermont	17.9%	25.3%	36.2%	31.4%	38.8%	47.1%	50.3%	33.7%	35.1%	0.033
Virginia	15.9%	18.9%	19.3%	20.5%	21.4%	21.1%	21.7%	19.8%	19.8%	0.006
Washington	16.9%	17.7%	17.1%	16.7%	23.0%	27.6%	25.9%	25.8%	21.3%	0.017
West Virginia	16.6%	17.9%	16.5%	16.5%	18.1%	24.3%	28.8%	24.4%	20.4%	0.016
Wisconsin	36.8%	23.7%	29.7%	31.2%	32.1%	44.4%	42.8%	33.2%	34.2%	0.014
Wyoming	17.9%	19.6%	17.1%	13.9%	21.6%	27.0%	23.8%	21.8%	20.3%	0.01
Total	20.0%	21.6%	22.2%	23.2%	24.4%	26.3%	27.5%	24.5%	23.7%	0.009

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approved for free lunches and having incomes below 130 percent of poverty has declined slightly for the last two years.

- The bad news is that the proportion between 130 and 185 percent of the K-12 enrollment grew between every one of the last eight years.

State by state, the proportion of K-12 students approved for free or reduced-price school lunches increased between 1992 and 1999 in 46 states, and declined in only six states. The largest gains in the proportions of K-12 enrollment approved for subsidized school lunches occurred in **Hawaii** (+10.8%), **Kentucky** (+8.5%), **Nevada** (+8.3%), **Tennessee** (+8.0%), **West Virginia** (+7.2%), **Rhode Island** (+6.9%), **New Jersey** (+6.4%) and **Oklahoma** (+6.3%). Clearly, these states will have to make special efforts beyond current programs and funding to prepare for the growth in children from low income families needing grants to finance their higher educations.

The only states where the proportion of K-12 enrollment approved for subsidized school lunches declined between 1992 and 1999 were **South Dakota** (-14.9%), **Oregon** (-10.4%), **Colorado** (-6.3%), **Puerto Rico** (-5.4%), **Pennsylvania** (-0.6%) and **New Hampshire** (-0.2%).

There is a profoundly serious racial/ethnic dimension of the data on low income families and their low college participation rates. More than 70 percent of dependent 18 to 24 year olds from family incomes below $33,000 in 1999 were either black, Hispanic or Asian/Pacific Islander. Less than 30 percent were non-Hispanic whites. Less than a quarter of those from higher family income levels were minorities--more than three-quarters were non-Hispanic whites.

Moreover, a rapidly growing share of the high school graduate population is minority. Quite likely, the growth in K-12 enrollments approved for subsidized school lunches is a largely minority phenomenon.

But in stark and ugly contrast, student financial policy at the federal, state and institutional levels of social policy is moving away from serving students from low income families, and toward serving students from higher and even the highest family income levels. We do not know how to directly measure the movement of financial aid away from minorities and toward the majority but shrinking white non-Hispanic population, but it has been occurring with increasing brazenness since passage of the Middle Income Student Assistance Act in 1978.

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Number 113 www.postsecondary.org November 2001

College Enrollment by Age 1950 to 2000

Colleges compete with the labor market and other adult endeavors for the time and attention of young people in a hurry to grow up. Gradually, young adults drift away from higher education and into their other adult roles. Higher education's opportunity to enroll and educate young adults is brief. For individuals, college enrollment has opportunity costs of foregone income and lifestyle choices.

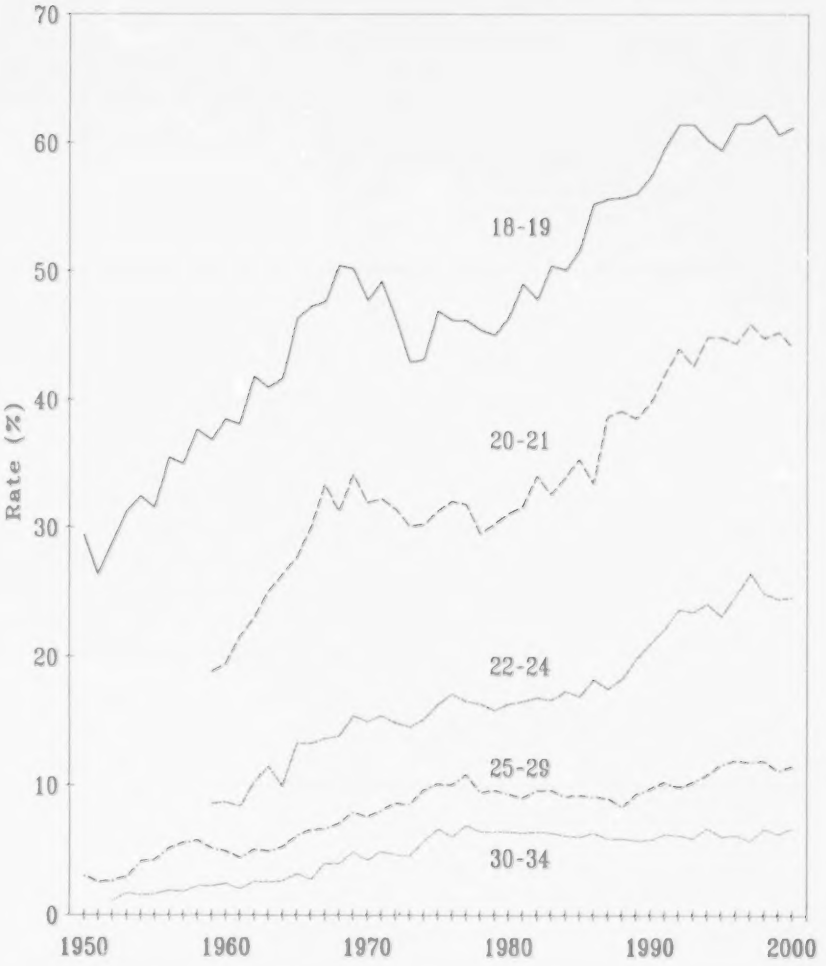
However, as the data described here illustrate, a growing share of adults remain enrolled in school. They extend their formal education both because they want to (demand for higher education), and because they can (supply of higher education opportunity).

Here we explore school (mostly college) enrollment of the population beginning at age 18 through whatever age people still seek the benefits of higher education. Note that compulsory state school enrollment laws require school enrollment through about age 16. After 16 school enrollment becomes voluntary. At age 18 when young people become adults, many adult roles are available and higher education is in hot competition for the commitment of adults.

Controlling for age, different demographic groups of the population show distinctive enrollment trends and patterns. Notably:

- Women are more likely to be enrolled than are men.
- Asian/Pacific Islanders and non-Hispanic whites are more likely to be enrolled than are blacks and Hispanics at younger adult ages, but blacks become those most likely to be enrolled after age 30.
- Adults over 25 are more likely to be enrolled in college as undergraduates in the western

Enrollment Rates for Population 18 to 34 Years
1950 to 2000



Rocky Mountain states, and less likely to be enrolled as undergraduates in the mid-Atlantic states, than are people at this age in the rest of the United States.

- Public institutions provide about 80 percent of undergraduate enrollment at all age levels.
- Four-year colleges enroll about three quarters of undergraduates in higher education through age 24, two thirds of those between 25 and 34 years, and about half of undergraduates age 35 and over.

These and many other findings result from our analysis of Census Bureau and National Center for Education Statistics data on enrollments by age.

The Data

The primary source of data used in this analysis is the Census Bureau's Current Population Survey. The CPS is a monthly survey of a national sample of about 50,000 U.S. households used to gather data on employment and unemployment. The survey is limited to the civilian, noninstitutional population, and thus excludes persons in military service, correctional facilities and other institutional facilities.

In the October CPS the education supplement is used to gather data on school enrollment of the population. In the March CPS another supplement gathers information on the educational attainment of the population. Data examined here rely mainly on the October CPS for school enrollment by age.

Our main focus in this analysis is on undergraduate enrollments by age. These data were originally gathered for a presentation to the Council for Adult and Experiential Learning (CAEL) at their fall 2001 conference recently held in Orlando. However, available data from Census invite a broader look at adult enrollment and education. Thus some of the data examined here includes broader measures of school enrollment for those age 18 and over. Specifically, besides undergraduate enrollment, some younger adults are still completing high school, and many older adults are enrolled as graduate students. A fourth category of adult education reported by the Census Bureau but not explored in detail here are adults taking vocational courses in a non-school setting.

This analysis includes unique state-level analyses of undergraduate enrollment for students age 25 years and over. These data are for fall 1998. Here, with the assistance of Kim Mergenthaler at CAEL, we have used data on undergraduate enrollment by age 25 years and over from the fall 1998 IPEDS enrollment survey, and combined these data with Census Bureau estimates of state population in these same IPEDS age ranges. The results are undergraduate enrollment rates for each state by age range and gender. This is something OPPORTUNITY subscribers have requested in the past, and that we are pleased to now be able to provide.

School Enrollment Rates by Age

The chart on page 1 of this issue of OPPORTUNITY shows school enrollment rates by age group between 18 and 34 years for the years from 1950 through 2000.

- For those 18 to 19 years, enrollment rates increased from 29.4 percent in 1950 to 61.2 percent by 2000.
- For those 20 to 21 years, school enrollment rates increased from 18.8 percent in 1959 to 44.1 percent in 2000.
- For those 22 to 24 years, enrollment rates grew from 8.6 percent in 1959 to 24.6 percent by 2000.
- For people 25 to 29 years, school enrollment rates increased from 3.0

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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percent in 1950 to 11.4 percent in 2000.

- For people 30 to 34 years, enrollment rates increased from 1.1 percent in 1952 to 6.7 percent in 2000.

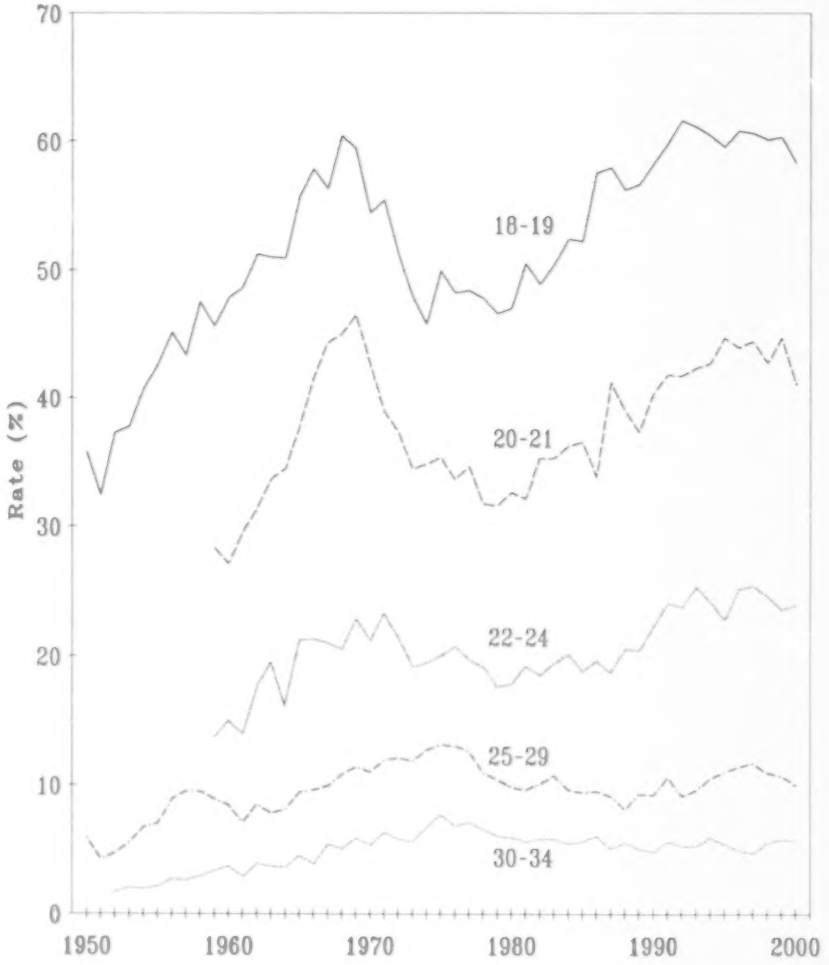
Clearly, at every age, school enrollment rates have increased greatly over the last five decades. But different population groups have had quite different experiences. Take, for example, males and females.

Gender. We have long held that men and women are living on different planets, despite their brother-sisterhood. The chart on this page shows school enrollment rates for men for the last five decades. It differs sharply from the equivalent chart for females on the following page.

- Between 1950 and 2000 the enrollment rate for males ages 18 to 19 years increased from 35.7 percent in 1950 to 58.3 percent by 2000, an increase of 22.6 percent.
- For males 20 to 21 years, the enrollment rate increased from 28.3 percent in 1959 to 41.0 percent by 2000, an increase of 12.7 percent.
- At 22 to 24 years, enrollment rates increased from 13.7 percent in 1959 to 23.9 percent by 2000, or by 10.2 percent.
- At 25 to 29 years, enrollment rates increased from 5.9 percent in 1950 to 10.0 percent in 2000, or by 4.1 percent.
- At 30 to 34 years, enrollment rates increased from 1.7 percent in 1952 to 5.6 percent in 2000, or by 3.9 percent.

For males the effects of the Vietnam War in the late 1960s and early 1970s are particularly pronounced on younger males between the ages of 18 and 21 years. During that War, military conscription combined with exemption for full-time college enrollment brought many young males into college. This bulge in their

Enrollment Rates for Males 18 to 34 Years
1950 to 2000

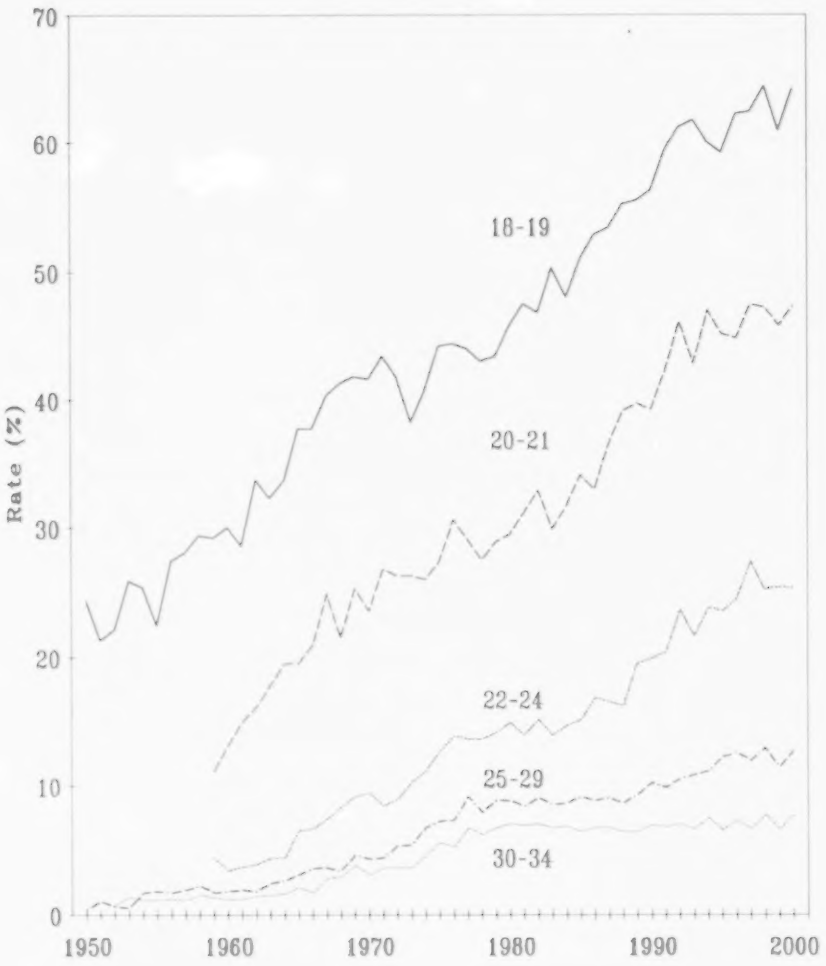


enthusiasm for college lasted only until the military draft was ended in 1972. Thereafter males enrollment rates fell back to pre-War levels. At both the 18 to 19 and 20 to 21 year old age ranges, school enrollment rates were higher during the peak of the Vietnam War than they were in 2000. There must be something about war that focuses the male mind on the advantages of college enrollment.

Quite interesting is the peak in school enrollment for males ages 25 to 29 and 30 to 34 years in the late 1970s, well after the War was over and the draft had ended. Apparently many males encouraged to enroll in college during the War remained in college long after the War was over. Among 25 to 29 and 30 to 34 year old males, enrollment rates were greater in the late 1970s than they were in 2000.

For women a quite different pattern emerges between 1950 and 2000, as shown in the chart on the following page. The growth in enrollment rates is steadier, not apparently influenced by the Vietnam war, and far greater for women than it was for men over the last five decades.

Enrollment Rates for Females 18 to 34 Years 1950 to 2000



- Among 18 to 19 year old women, enrollment rates increased from 24.3 percent in 1950 (18.5 percent in 1947), to 64.2 percent by 2000, an increase of 39.9 percent (compared to an increase of 22.6 percent for men).
- Among 20 to 21 year old women, enrollment rates increased from 11.1 to 47.3 percent between 1959 and 2000, an increase of 36.2 percent (compared to an increase of 12.7 percent for men).
- Among women 22 to 24 years old, enrollment rates increased from 4.4 to 25.3 percent between 1959 and 2000, an increase of 20.9 percent (compared to an increase of 10.2 percent for men).
- Among women 25 to 29 years old, enrollment rates increase from 0.4 percent in 1950 to 12.7 percent in 2000, an increase of 12.3 percent (compared to an increase of 4.1 percent for men).
- Among women 30 to 34 years old, enrollment rates increased from 0.7 percent in 1952 to 7.7 percent in 2000, an increase of 7.0 percent (compared to an increase of 3.9 percent for men).

The progress of women in school enrollments over the last 50 years is simply stunning. At each of these five age groupings, enrollment rates for women moved from well behind those of men to well ahead of those of men during the last 50 years. This is a profoundly significant change, one that we have drawn attention to often since 1995 in these pages of OPPORTUNITY. It is a change we barely understand, whose meaning we seem currently oblivious to, that will permanently alter the way we live.

Race/ethnicity. The Census Bureau has collected and reports school enrollment rates by age for the major racial/ethnic groups (with gender breakdowns): whites, blacks and Hispanics (since 1972). In the last few years the Census Bureau has begun adding reporting categories: white non-Hispanic (since 1993), black non-Hispanic (since 1993) and Asian and Pacific Islander (since 1999). The data for blacks from 1947 through 1966 are for blacks and other races.

The data for whites is very similar to the chart on page 1 of this issue of OPPORTUNITY. It is not reproduced here because of space limitations. However, the larger minority populations--blacks and Hispanics--remain of vital public interest. Their growing share of the U.S. population means that they will replace the declining share of the population that is white. Because whites are far better educated than blacks or Hispanics, rapid and substantial gains in minority education attainment are vital to sustaining the human capital economy now driven disproportionately by college-educated whites.

The charts on page 5 shows school enrollment rates by age for blacks and Hispanics.

The picture for blacks is one of long-term and very substantial increases in school enrollment rates at each age

group. The 2000 data are at or very close to record high enrollment rates, thus indicating that progress continues to be made.

For Hispanics there is less progress shown, and during most of the 1990s enrollment rates for Hispanics age 18 to 21 have been declining following increases in the 1970s and 1980s. Other Hispanics, particularly between the ages of 22 and 24 years, continued to make progress in school enrollments during the 1990s however.

Space does not permit presentation of all of the available data on school enrollment rates by race/ethnicity for each of the older age cohorts for all years in the time series. But to highlight these data for one year--2000--we have summarized the data for each racial/ethnic group reported by the Census Bureau in the following table:

School Enrollment Rates in 2000 by Age and Race/Ethnicity

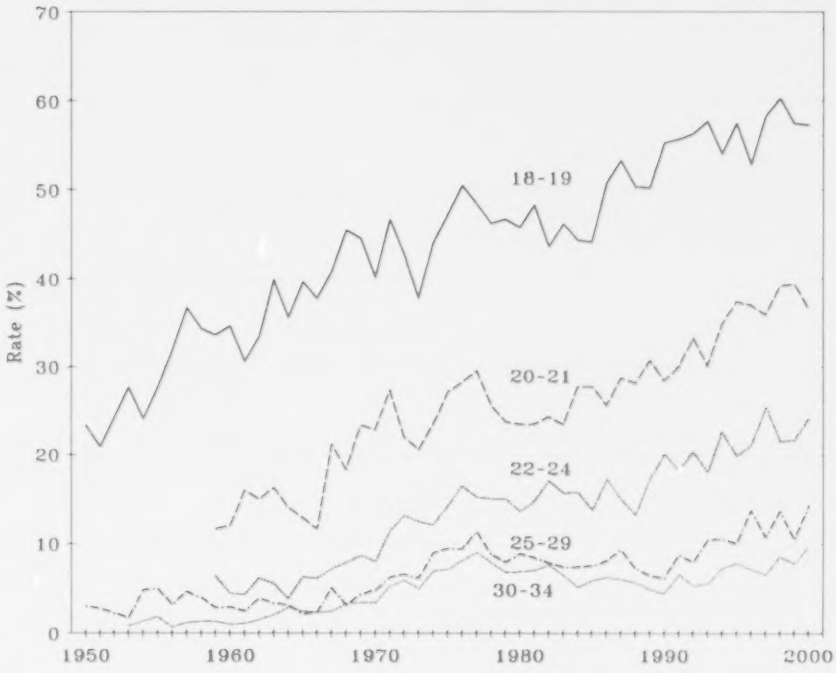
	18-19	20-21	22-24	25-29	30-34
White	61.3	44.9	23.7	10.4	6.0
White-nH	63.9	49.2	24.9	11.1	6.1
Black	57.2	36.6	24.2	14.3	9.6
Black-nH	57.2	37.4	24.0	14.5	9.9
Asian/PI	75.5	67.2	49.1	16.0	10.3
Hispanic	49.5	26.1	18.2	7.4	5.6

At each age level, Asian/Pacific Islanders have the highest enrollment rates, and Hispanics have the lowest. Enrollment rates for whites are higher than those for blacks between the ages of 18 and 21 years, but black enrollment rates are higher than those for whites between 22 and 34 years.

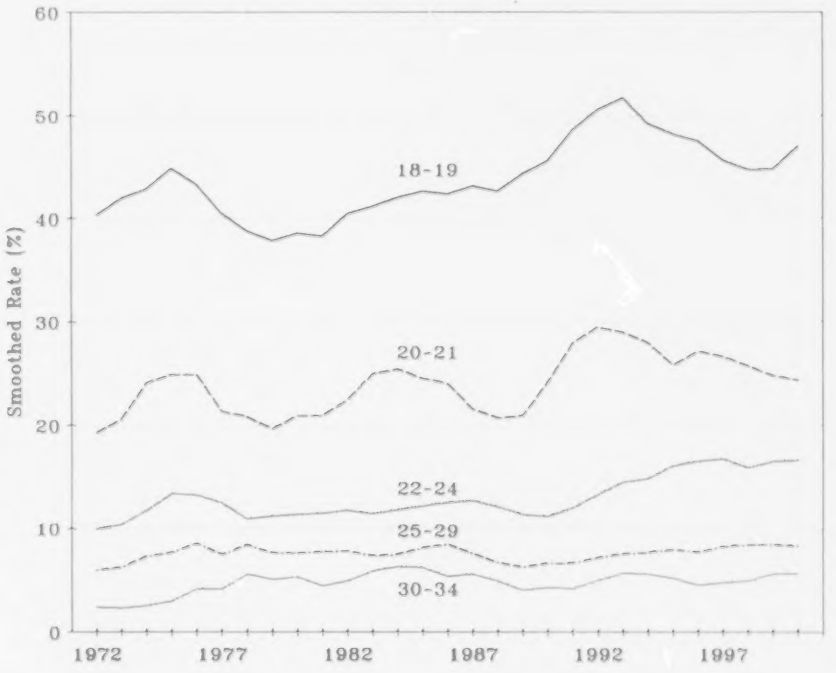
Undergraduate Enrollment by Age

In October 2000 there were 12,399,000 undergraduates enrolled in American colleges and universities according to the Census Bureau. They

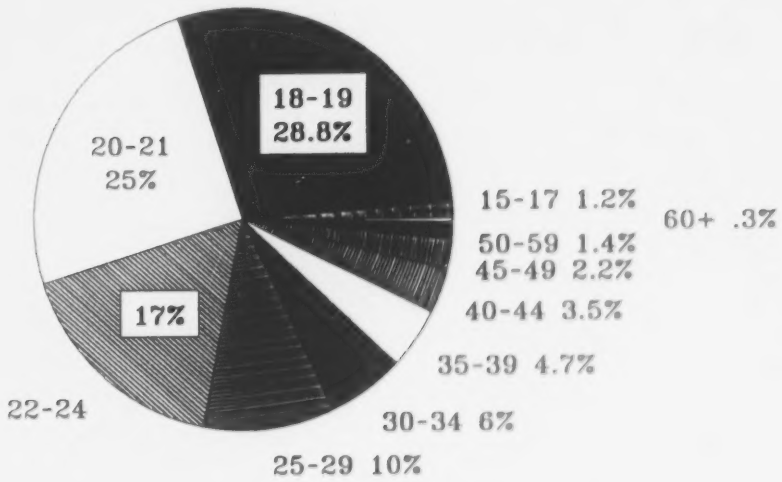
Enrollment Rates for Blacks 18 to 34 Years
1950 to 2000



Enrollment Rates for Hispanics 18 to 34 Years
1972 to 2000

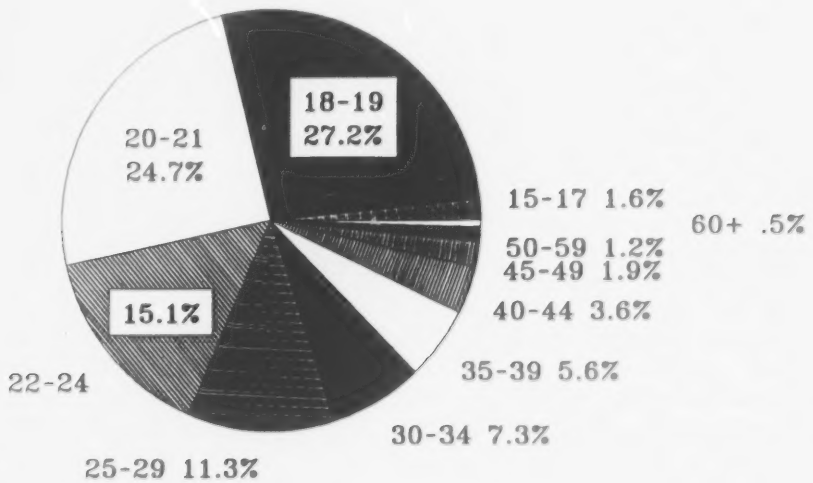


Undergraduate Enrollment by Age October 2000



Undergraduates: 12,399,000

Undergraduate Enrollment by Age October 1990



Undergraduates: 11,108,000

were distributed by age according to the top pie chart on this page.

Undergraduate enrollment begins early. About 1.2 percent of those 16 to 17 years old are enrolled in college as undergraduate students. Over half of all undergraduate students--55 percent--were age 21 or less. Another 27 percent were 22 to 29 years old. The remaining 18 percent were 30 and over.

A decade earlier, in 1990, there were 11,108,000 undergraduates enrolled in U.S. colleges and universities. They were distributed by age according to the bottom pie chart on this page.

Between 1990 and 2000 the age distribution of undergraduates shifted only slightly. The share of undergraduates age 21 or less increased by 1.5 percent between 1990 and 2000. The share of undergraduates age 22 to 29 increased by 0.6 percent. The share of undergraduates age 30 and over decreased by 2.1 percent between 1990 and 2000.

At age 18 years and over, not all students are undergraduates, as shown in the first chart on the following page for October 2000.

- At age 18 to 19, 72.4 percent of those enrolled in school were undergraduate college students. At that age, 26.9 percent were still enrolled below college. But 0.5 percent were already enrolled in graduate school too.
- By age 20 to 21, 93.3 percent of school enrollments were undergraduate students. An additional 4.4 percent were still enrolled below college, and an additional 2.3 percent were now in graduate school.
- By age 22 to 24, 77.4 percent of school enrollments were undergraduates. About 1.8 percent of enrolled students were enrolled below college, and 20.9 percent

were now in graduate school.

- By age 25 to 29, 61.3 percent of enrolled students were undergraduates. Interestingly, 3.3 percent were enrolled below college (up from 1.8 percent of those 22 to 24). 35.3 percent were enrolled in graduate school.
- At age 30 to 34, just 57.4 percent of those enrolled in school were undergraduates. 3.7 percent were enrolled below college, and 38.9 percent were enrolled in graduate schools.

The second chart on this page shows undergraduate enrollment rates by age. This is the proportion of the U.S. population enrolled in school as undergraduate students.

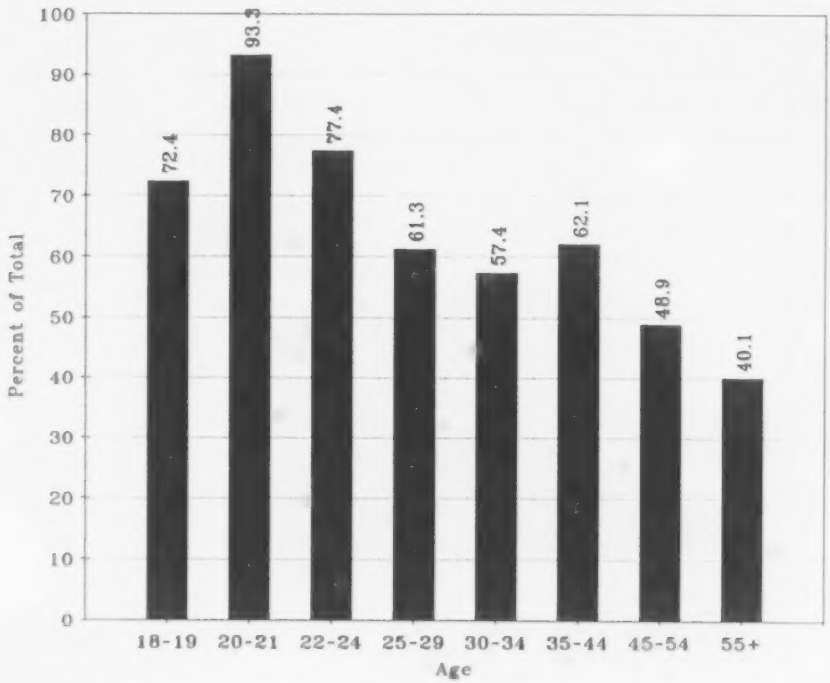
Clearly undergraduate enrollment rates are highest between the ages of 18 and 21 years. In October 2000, more than 40 percent of the U.S. population was enrolled in college as undergraduates.

A decade earlier, in October 1990, there was a similar pattern in enrollment rates. However, between 1990 and 2000 the growth in undergraduate enrollment rates was greatest between the ages of 20 and 24 years. Undergraduate enrollment rates for the age 30 years and over barely changed between 1990 and 2000.

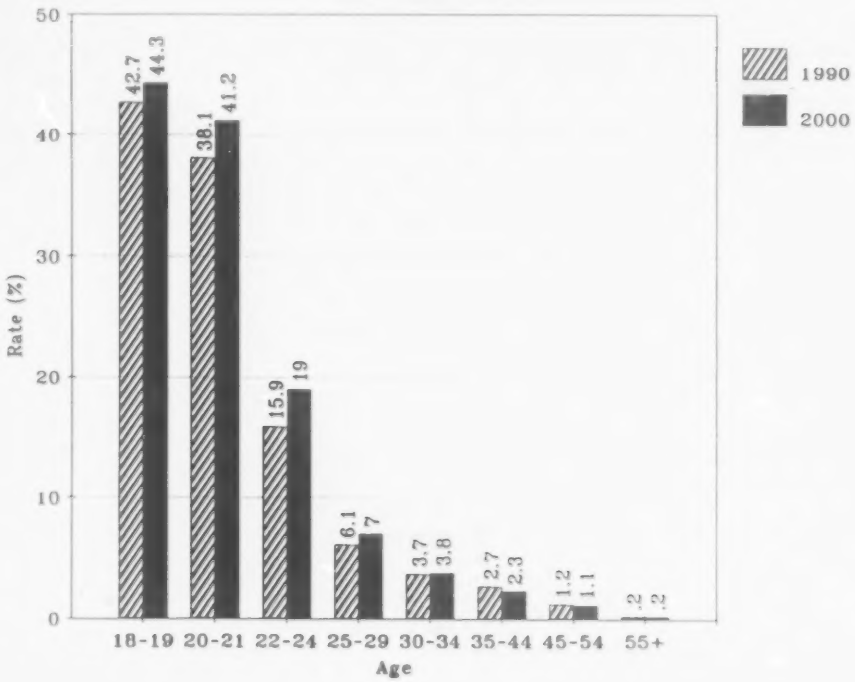
Gender. In October 2000 undergraduate enrollment rates by gender are shown in the first chart on the following page. At all age ranges--except 22 to 24 years--enrollment rates for women were greater than were those for men, often by substantial margins.

This gender difference is greatest in the 18 to 19 and 20 to 21 year old cohorts. At age 18 to 19, the undergraduate enrollment rate for women exceeded the male rate by 12.1 percentage points. By ages 20 to 21, the enrollment rate for women exceeded the male rate 6.9 percent.

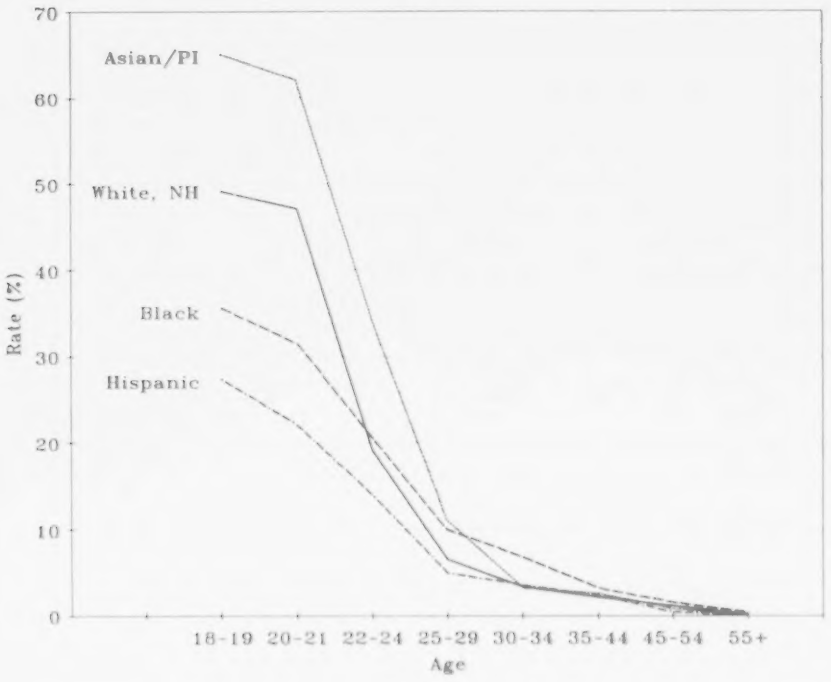
Undergraduate Share of Enrollment by Age
2000



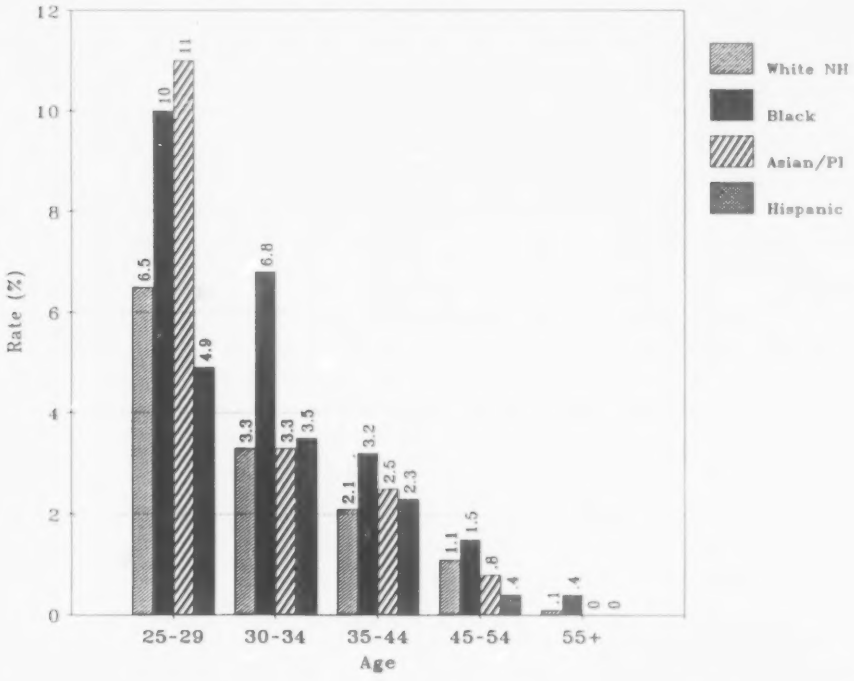
Undergraduate Enrollment Rates by Age
1990 and 2000



Undergraduate Enrollment Rates by Age and Race/Ethnicity 2000



Undergraduate Enrollment Rates by Age and Race/Ethnicity 2000



We have written often in these pages about the growing disparity between the performance of males and females throughout the education pipeline. These data are another illustration of this disparity. Between 1990 and 2000 undergraduate enrollment rates for young adult males actually declined, but increased sharply for females. Between ages 22 to 24 years male undergraduate enrollment rates increased between 1990 and 2000, but by less than they did for women:

	Male	Female
18-19	-2.8%	+6.1%
20-21	-1.0%	+7.1%
22-24	+2.6%	+3.6%
25-29	+1.2%	+0.6%
30-34	+0.4%	-0.1%

The pattern suggested in the above data is that the women "get it" earlier than do the men. (Or, as mothers say: boys mature later.) Women appear to engage in undergraduate education sooner after high school than do the men. They complete it sooner than the men do, and thus by age 30 to 34 male undergraduate enrollment rates have risen while they have declined for women.

Race/ethnicity. The four major racial/ethnic groups reported by the Census Bureau tend to show distinctive patterns in undergraduate enrollment by age, as shown in the two charts on this page.

- Asian and Pacific Islanders have by far the highest undergraduate enrollment rates between ages 18 and 29, but then have the lowest thereafter. In October 2000 65.0 percent of Asian/PI's age 18 and 19 were enrolled as undergraduates, and at ages 20 to 21 years 62.2 percent were still enrolled.
- White non-Hispanics had the second highest rates, at 49.1 percent for 18-19 year olds, and 47.1 percent for 20-21 year olds.
- Blacks have the third highest undergraduate enrollment rates

between 18 and 21 years, at 35.6 percent for those 18 to 19, and 31.5 percent for those 20 to 21 years. However, from age 30 and on blacks are more likely to be enrolled as undergraduates than is any other group.

- Through age 30 Hispanics are least likely to be enrolled in college as undergraduates. At age 18 to 19, 27.3 percent are enrolled, at age 20 to 21 22.1 percent are enrolled, and at 22 to 24 years 13.9 percent are in college as undergraduate students.

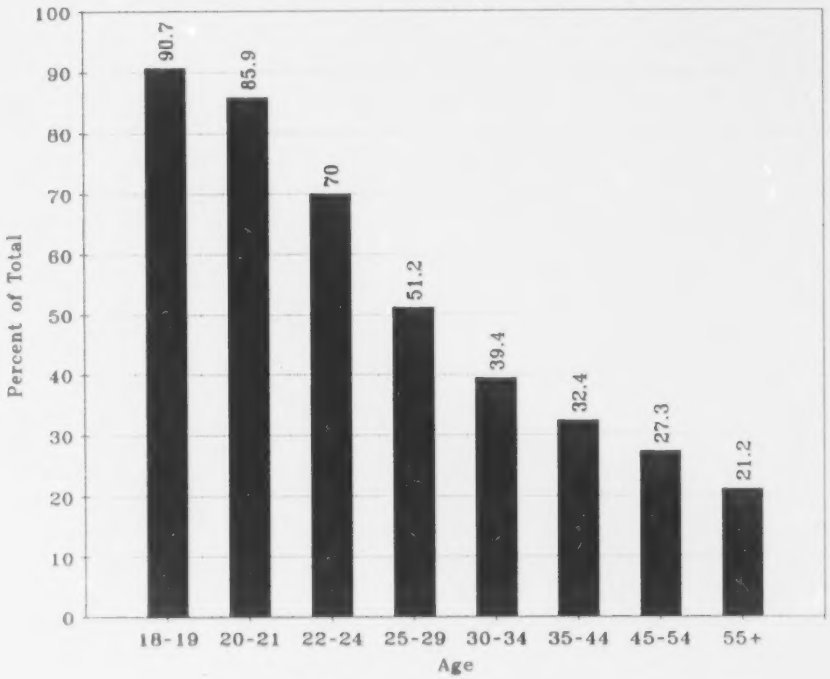
Enrollment Status. Undergraduate enrollment status--whether full-time or part-time--is strongly related to age. Younger undergraduates, between 18 and 24, are most likely to be enrolled on a full-time basis. Beyond age 30 undergraduates are most likely to be enrolled part-time, as shown in the top chart on this page.

This shift from full-time to part-time college attendance is clearly related to the opportunity costs of college attendance. Life gets complicated as young adults move through their twenties. Time available to devote to college diminishes as careers and families are started, and financial obligations dictate priorities. This makes higher education's ability to capture students while they are young critical to the success of the education enterprise.

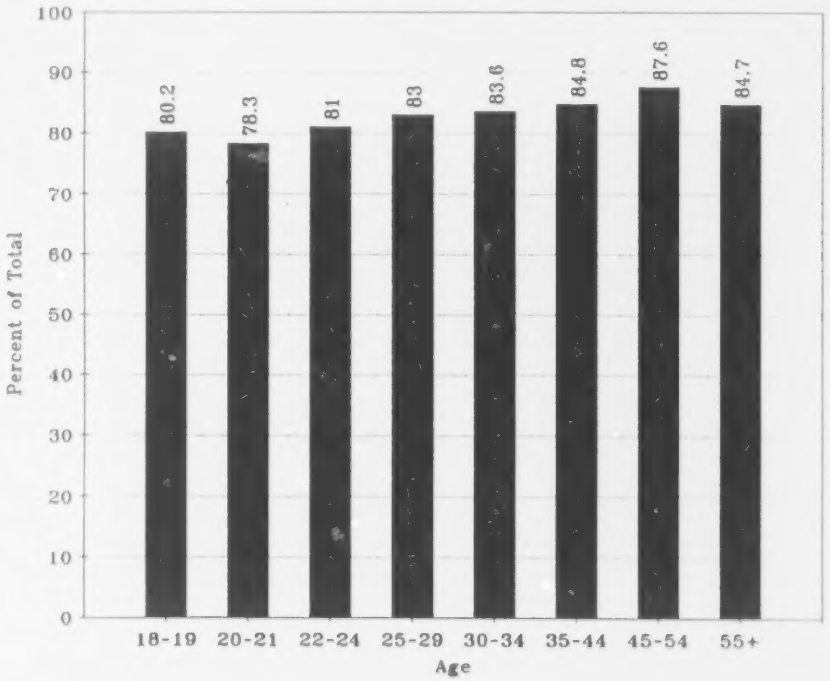
Institutional control. Overall about 80 percent of undergraduate college students are enrolled in public institutions. The public institution share of undergraduate enrollments at each age level remains close to this figure, dipping slightly toward privates between the ages of 20 and 21 years, as shown in the bottom chart on this page. Above age 25 between 83 and 88 percent of undergraduate enrollments are in public institutions.

Institutional level. Most students at

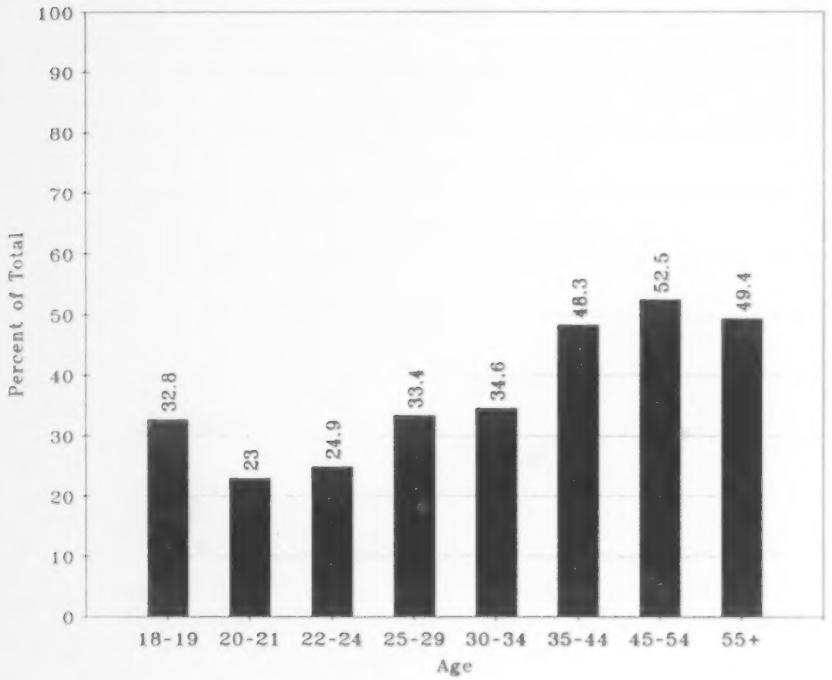
Full-time Share of Undergraduate Enrollment by Age
2000



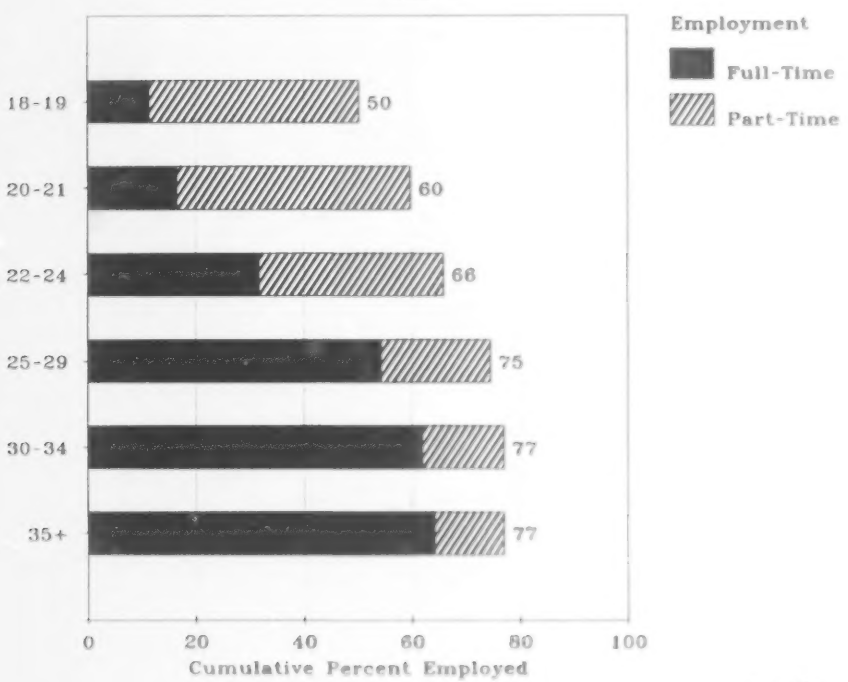
Public Share of Undergraduate Enrollment by Age
2000



2-Year Share of Undergraduate Enrollment by Age
2000



Employment Rates of College Students by Age
2000



the undergraduate level are enrolled in four-year institutions. This is particularly true of undergraduate students between the ages of 20 and 24 years where more than three quarters are enrolled in four-year institutions.

Above age 35, however, about half of all undergraduate students are enrolled in two-year colleges.

Employment. College enrollment has always been in stiff competition with the labor market and other adult pursuits. Eventually college loses out to these alternatives. And as the data in the second chart on this page show, most students try to do both at the same time.

- At age 18 to 19, half of all college students were also working at least part-time.
- The employment rate among college students 20 to 21 years rose to 60 percent.
- Two-thirds of college students 22 to 24 years also had jobs.
- By ages 25 to 29 years, three-quarters of college students were working, and over half of college students were working full-time by then also.

Vocational courses. In addition to these institution-based (school) enrollments, other adults are also taking vocational courses in non-school settings. These too are age-related. Vocational course enrollment rates by age cohort in October 2000 were as follows:

15-19 years	1.3%
20-24 years	3.2%
25-34 years	2.9%
35-44 years	2.2%
45-64 years	1.6%
65 years and over	0.5%

Vocational course taking increased with educational attainment in 2000:

not high school graduate	0.5%
high school graduate only	1.5%
some college	2.8%
bachelor's or more	2.8%

At most age levels, vocational course-taking rates were greater among those employed part-time than they were among those employed full-time:

	Full-time	Part-time
15-19	1.9%	1.9%
20-24	3.0%	3.5%
25-34	2.9%	3.7%
35-44	2.4%	2.3%
45-64	1.8%	2.0%
65+	1.1%	0.9%

Older Undergraduate Enrollment by State

This analysis of college enrollments by age was first suggested by Dr. Thomas Flint of the Council for Adult and Experiential Learning (CAEL) in Chicago. CAEL was especially interested in older undergraduate enrollment rates by state. During the course of development of data reported here, CAEL and OPPORTUNITY jointly examined enrollment rates by state for undergraduates by gender and age 25 years and over. One of the results of that joint effort is the chart on this page of undergraduate enrollment rates of state populations between the ages of 25 and 29 years.

This analysis combined age data on undergraduate enrollments by state reported in the fall 1998 IPEDS enrollment survey, with Census Bureau data on state population estimates by age and gender as of July 1, 1998. This combination produced a large Excel workbook available on our website (www.postsecondary.org) of undergraduate college enrollment rates by state and gender for the following age intervals: 25-29, 30-34, 35-39, 40-49 and 50-64. The population and enrollment data used to calculate the rates are shown in each state's spreadsheet.

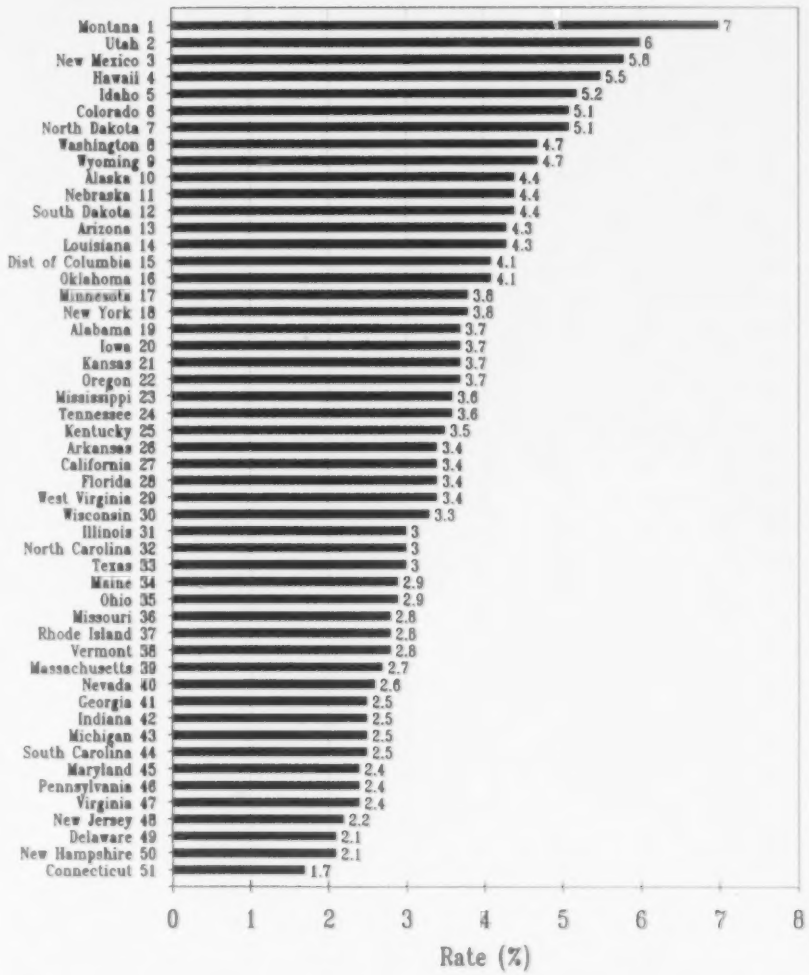
For 25 to 29 year olds, undergraduate enrollment rates in 1998 ranged from 1.7 percent in **Connecticut** to 7.0 percent in **Montana**. The regional patterns in this ranking are clear and striking.

- The 13 states with the highest enrollment rates for undergraduates are all western states.
- The states with the lowest enrollment rates are all New England or mid-Atlantic states.

We have no simple explanation for these regional differences. Always observed higher education enrollments occur at the intersection of student demand and institutional supply curves. Or, higher education enrollments are never more or less than the limiting factor of the number of students seeking enrollment and institutions willing and able to enroll them. Causal explanations remain for future research.

The data on college enrollment rates have shown remarkable growth over the last 50 years. Every demographic group has participated to some degree, some more than others. Given the emergence of college education as vital to individual and social economic success since the early 1970s, this is a record of who is preparing to engage in life's opportunities and who is not.

Enrollment Rate of Persons 25 to 29 as Undergraduates 1998



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Higher Education Refinancing Measured by The National Income and Product Accounts 1952 to 2000

Higher education is absolutely vital to the economic success of persons, families, cities, states and the country. While higher education was always important, in the Human Capital Economy that has evolved since the early 1970s, increasingly only those with higher education are successfully engaged in the rich opportunities available in the United States today. Those without higher education have seen absolute and relative decline in their living standards for nearly three decades. The welfare of the country is dividing along the measure of higher educational attainment.

But our analysis of the National Income and Product Accounts (NIPA) produces the troubling finding that throughout most of the 1990s our country has devoted a shrinking share of Gross Domestic Product (GDP) to investment in higher education.

- In 2000 taxpayers and families spent $168.8 billion on higher education, or 1.71 percent of GDP.
- In 1993 taxpayers and families spent $121.8 billion on higher education, or 1.83 percent of GDP.
- If taxpayers and families had made the 1993 higher education investment effort in 2000, they would have spent $180.7 billion on higher education.
- This means that the 2000 taxpayer and family investment in higher education was $11.9 billion, or 6.6 percent, below the peak 1993 investment effort.

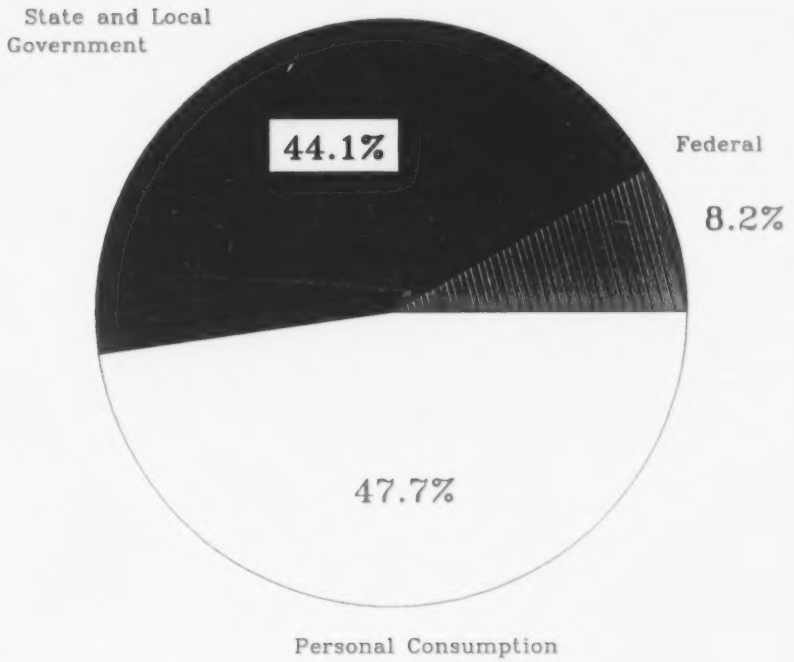
We find this retreat from private and social investment in higher education since 1993 to be at odds with the country's growing dependency on higher education for private and social welfare.

In this analysis we cannot answer why this has occurred. But we can and do answer how this has happened, and when and where and by whom. The details of the National Income and Product Accounts of the United States provide measures of insight into this critical lapse.

What we find is that first state and local government taxpayers began retreating from their historic investment role. In the latter half of the 1990s families have begun reducing their investments in higher education. Only federal taxpayers have maintained their historic investment effort levels over the last two decades.

In an upcoming issue of OPPORTUNITY, we will explore the sharp reduction in state investment in higher education on a state-by-state basis. State efforts peaked about 1979 and have declined in all states since then. In a few states--especially Colorado and Vermont--investment efforts have been reduced by more

Revenues by Source for Higher Education 2000



Total: $168,800,000,000

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than half over the last two decades.

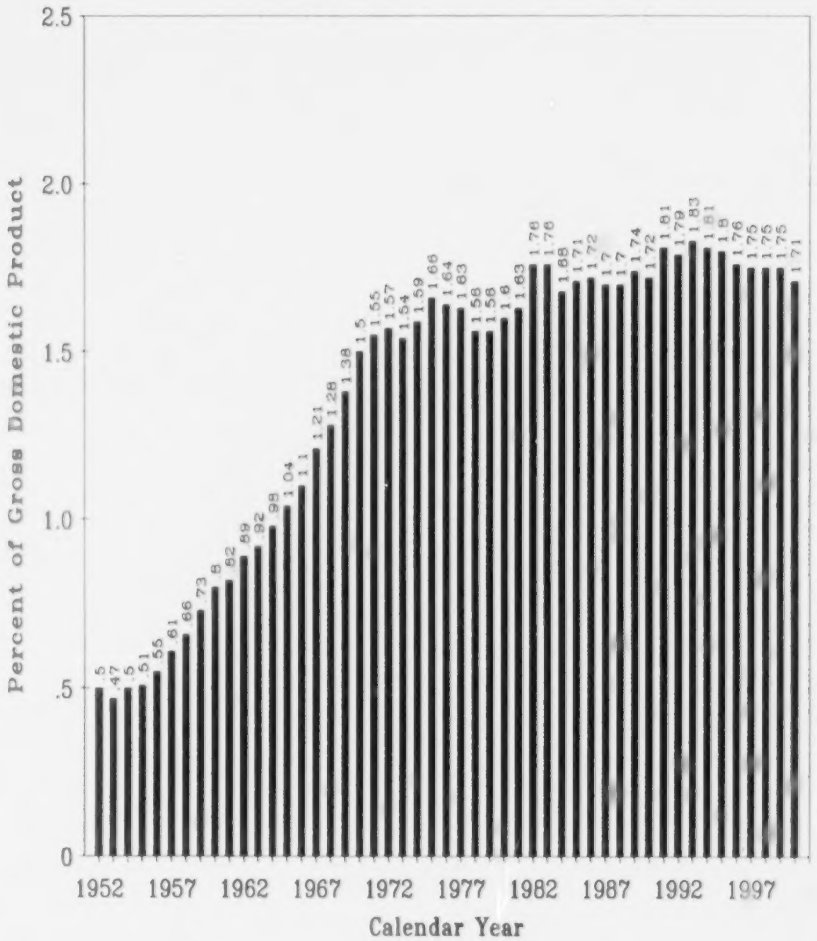
Mainly we study opportunity for higher education for students in these pages of OPPORTUNITY. But higher educational opportunity costs money: for **capacity**, for **quality** and for **affordability**.

When funding for higher education falls short of meeting student needs, higher educational opportunity measured in these three ways is always sacrificed. Without adequate resources, colleges may limit enrollments, reduce faculty and course selection, and/or raise prices.

- Enrollment limits often produce higher admissions standards, which adversely affect students from low income families, first generation, minorities and students who attended high school in poorer and smaller school districts. These are typically the students least well represented in higher education in the first place.
- Quality erosion for students shows up almost immediately in loss of course depth, breadth and availability. Longer term quality losses show up in faculty quality, workload, skimpier library acquisitions and other learning resource losses.
- Affordability is an obvious casualty when institutions raise their prices to offset losses from other revenue sources. While this has little or no impact on students from the top half of the family income distribution (above about $60,000), it has measurable consequences for student enrollment decisions of access, choice and persistence for students from the bottom half of the family income distribution.

The burden for this retrenchment falls unequally on different groups of students. That is the issue. Higher education provides the education and training that enable people to survive and thrive in modern America. Those who get a higher education do well, while those who are excluded cannot.

Higher Education's Share of Gross Domestic Product 1952 to 2000



The Data

The Bureau of Economic Analysis (part of the Department of Commerce), produces the National Income and Product Accounts of the United States. Most of the NIPA data are available on BEA's website at:

http://www.bea.doc.gov/

The NIPA data are periodically revised and updated. The most recent revision to historical data were published in a two volume set titled *National Income and Product Accounts of the United States, 1929-97*. More recent data, through 2000, were published in the October 2001 issue of *Survey of Current Business*, also by BEA.

Our analyses here rely on a few key components of NIPA:

- *Gross Domestic Product* is the market value of the goods and services produced by labor and property located in the United States. It is measured as the sum of personal consumption

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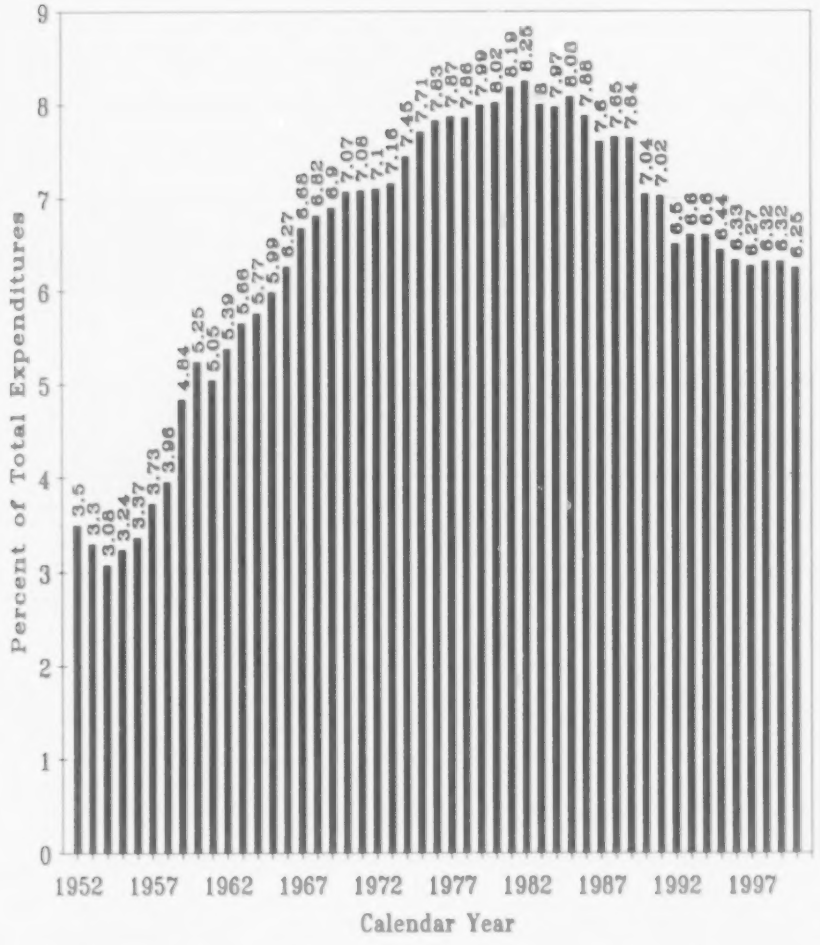
Higher Education's Share of Expenditures of State and Local Governments 1952 to 2000



expenditures, gross domestic private investment, net exports of goods and services, and government consumption expenditures and gross investment. GDP excludes intermediate purchases of goods and services by business.

- *Personal consumption expenditures* is goods and services purchased by U.S. residents. This consists mainly of purchases of new goods and of services by individuals from private businesses. However, it does include tuition payments for higher education.
- *Government current consumption expenditures* consist of compensation of general government employees, consumption of general government fixed capital and net current purchases from business and the rest of the world.

We have compiled the recently revised NIPA data into a single Excel workbook that is available on our website:

http://www.postsecondary.org

on the Spreadsheets page.

State and Local Government

Between 1968 and 1991, state and local governments provided the largest share of higher education funding for operations. The effort peaked in 1982 at 8.25 percent of all state and local government expenditures. By 2000 this had dropped to 6.25 percent, or about where higher education had been in 1966.

This two percent loss in state and local government effort between 1982 and 2000 converts to a reduction of $23.8 billion. Or, if in 2000 state and local governments had invested in higher education at the 1982 level of effort, instead of the $74.4 billion actually spent higher education they would have spent $98.2 billion. This is a 24.2 percent reduction in investment effort by state and local governments in 2000 compared to 1982.

Federal Government

The federal government arrived late at the higher education investment table, and its contribution is still modest and targeted. In 2000 the federal government spent about $13.8 billion on higher education, mainly student financial aid.

Beginning in 1962 the share of federal government expenditures allocated to higher education increased gradually to 0.75 percent in 1982. It has remained at close to this level in subsequent years, and in 2000 was again 0.75 percent of the expenditures of the federal government. This has been a maintenance of effort.

Personal Consumption

Since 1992 students and their families have provided the largest share of funding for higher education. In 2000 this was $80.6 billion.

Expressed as a proportion of total personal consumption expenditures,

tuition payments to higher education institutions rose from about 0.5 percent of personal income in the mid-1950s, to a peak of 1.27 percent in 1995. By 2000 this investment effort had dropped back to 1.20 percent. The difference between 1.27 and 1.20 percent was a loss to higher education of about $4.9 billion in 2000.

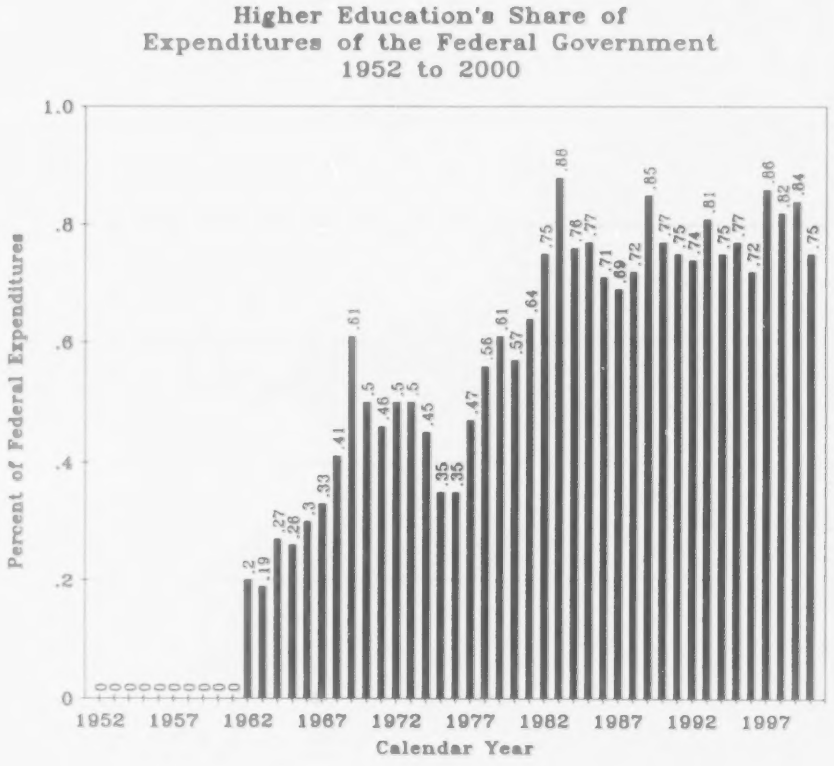
Summary and Conclusions

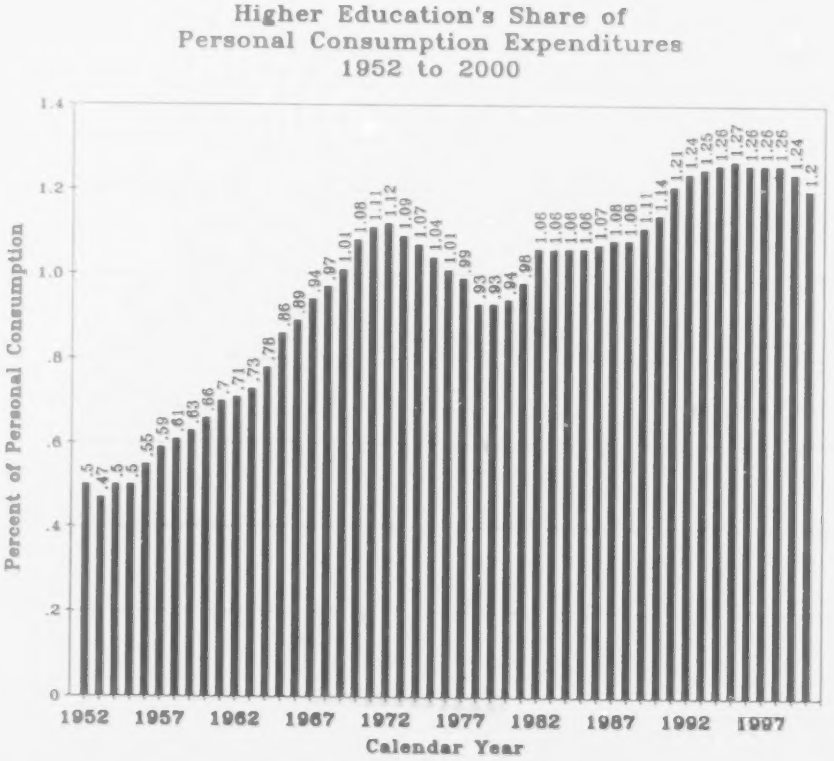
First, over the last five decades the roles and efforts of government and families to invest/finance higher education have shifted in several major directions, often at the same time and sometimes offsetting each other. The chart on the following page illustrates this ebb and flow between 1952 and 2000.

- Students and their families' share of the total investment declined from the early 1950s through 1979, and has been growing through 2000.
- The state and local government share of the total investment effort increased from the early 1950s to a peak in 1976, and has declined substantially since then.
- The federal share grew from nothing in 1961 to about 10 percent by 1982, and has remained close to this level since then.

Mainly what has occurred since the late 1970s is a cost-shift from state and local government taxpayers to students and their families. Since 1979, state and federal taxpayers are paying about $19 billion less for higher education, and students and their parents are paying about $19 billion more for their higher education.

Second, largely because tuition revenues have not increased as fast as state and local government funding has declined, higher education's share of GDP has been shrinking since 1993. The cumulative reduction in investment effort by students/parents





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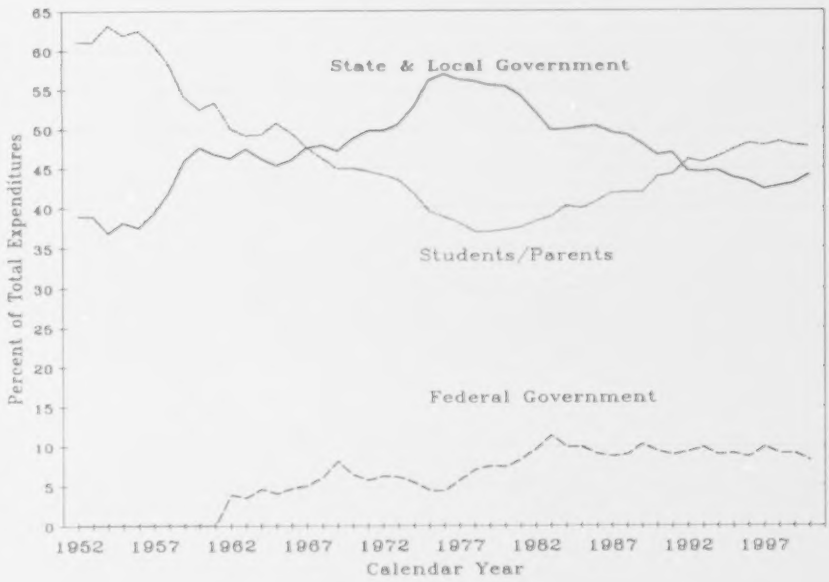
and federal/state/local government taxpayers was in 2000 about 89 percent of what it was in 1993, and dropping fast.

The original paradox that provoked this analysis remains: At the same time that higher education is more important to individual and social welfare than it has ever been, the shrinking share of GDP devoted to higher education since 1993 is a puzzling contradiction. If private and social investment is to be allocated to economic activities that improve economic performance and social welfare, then expanding private and social investment in higher education should be a national priority. But political rhetoric notwithstanding, higher education investment is clearly a diminished priority to state leaders, and apparently now to students and their parents as well.

Distribution of Responsibilities for Financing Higher Education 1952 to 2000



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Number 114 www.postsecondary.org December 2001

College Participation by Family Income, Gender and Race/Ethnicity for Dependent 18 to 24 Year Olds 1996 to 2000

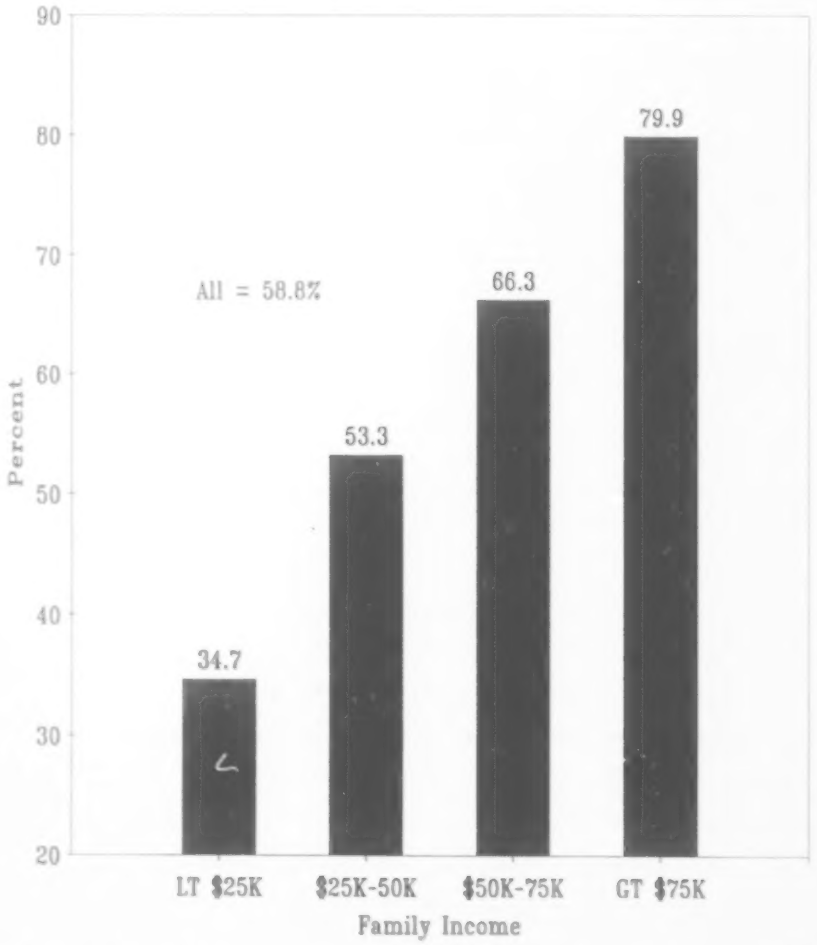
College participation consists of two voluntary educational commitments. First a student must complete and graduate from high school when school attendance is no longer required by law. And then, following high school graduation the student must voluntarily enroll in college. When enrolled in college the student is a college participant.

Different groups move through these voluntary enrollment stages of the educational pipeline at quite different rates.

- Students from higher income families are more likely to continue their enrollment through high school and into college than are students from families with lower incomes.
- Women are more likely than men to complete high school and enter college shortly thereafter.
- Asians are more likely than other racial/ethnic groups to complete high school and enter college.
- Hispanics are least likely to complete high school and continue their educations in college.

When these characteristics of family income, gender and race/ethnicity are separately controlled, the above patterns still hold. But the separate contributions of family income, gender and race/ethnicity become clearer. The formal statistical processes of separating presumably independent influences on voluntary enrollment behaviors is called multivariate analysis. Often multiple regression is used to measure the separate contributions of distinct influences on student enrollment behaviors. We will not do these more elaborate statistical procedures here. Rather, our intent is

College Participation Rates for Dependent 18 to 24 Year Olds
by Family Income
Average of 1996 to 2000



to straightforwardly describe college participation behaviors of dependent 18 to 24 year olds in terms of their family incomes, with further detailing by family income with gender and then with race/ethnicity. This detailing introduces the complexity of identification and measurement of the many more or less separate influences on college participation behaviors of students.

Further, to better understand the hemorrhaging from the educational pipeline that occurs between the end of compulsory school attendance and college enrollment, we break down college participation into first high school graduation, and then college continuation for those who graduate from high school. The results of this disaggregation of participation into high school graduation and college continuation shows where the education pipeline is leaking, for whom and by how much.

The Data

The data used in this analysis have been collected by the Census Bureau in the Current Population Survey. The CPS is a monthly survey of about 50,000 households designed to collect data on employment and unemployment in the U.S. In October the CPS is supplemented with additional questions on the school enrollment activities of household members.

The results of the October CPS school supplement are published in the P20 series of Current Population Reports. These reports are published in detail on the Census Bureau's website at:

http://www.census.gov/population/www/socdemo/school.html

This analysis is based entirely on the data published in Table 14 of this report. This table reports compiled data on "Enrollment Status of Dependent Primary Family Members 18 to 24 Years Old, by Family Income, Level of Enrollment, Type of School, Attendance Status, Sex, Race and Hispanic Origin ..."

Our analysis is limited to dependent family members between the ages of 18 and 24 years. This population feeds and is served primarily by four-year colleges and universities providing undergraduate education. We focus on this age group because we want family income information for these students that includes parental income.

Our analysis is less interested in year-to-year data than it is in more fundamental patterns in college participation across family income, gender and racial/ethnic classifications of the population. The reported annual data have a certain amount of statistical noise (standard errors of reported estimates) that blurs a picture we are trying to clarify. Thus, to dampen this noise we have averaged data for the most recent five or four-year periods (or in one case the last three years).

This averaging of several years family income data in reported income intervals creates its own problem of comparing dollars that differ from year to year by the amount of annual inflation (usually measured by the Consumer Price Index). The four family income intervals we have used are: $0 to $24,999, $25,000 to $49,999, $50,000 to $74,999, and $75,000 and over. They are not precisely comparable from year to year, but over a short time span with low inflation they are quite comparable. We believe we have more to gain in understanding high school graduation, college continuation and college participation rates by income level, gender and race/ethnicity than we lose by using a slightly blurry family income definition over the last five years.

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Mission Statement

This research letter is founded on two fundamental beliefs. First, sound public social policy requires accurate, current, independent, and focused information on the human condition. Second, education is essential to the development of human potential and resources for both private and public benefit. Therefore, the purpose of this research letter is to inform those who formulate, fund, and administer public policy and programs about the condition of and influences that affect postsecondary education opportunity for all Americans.

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College Participation by Family Income

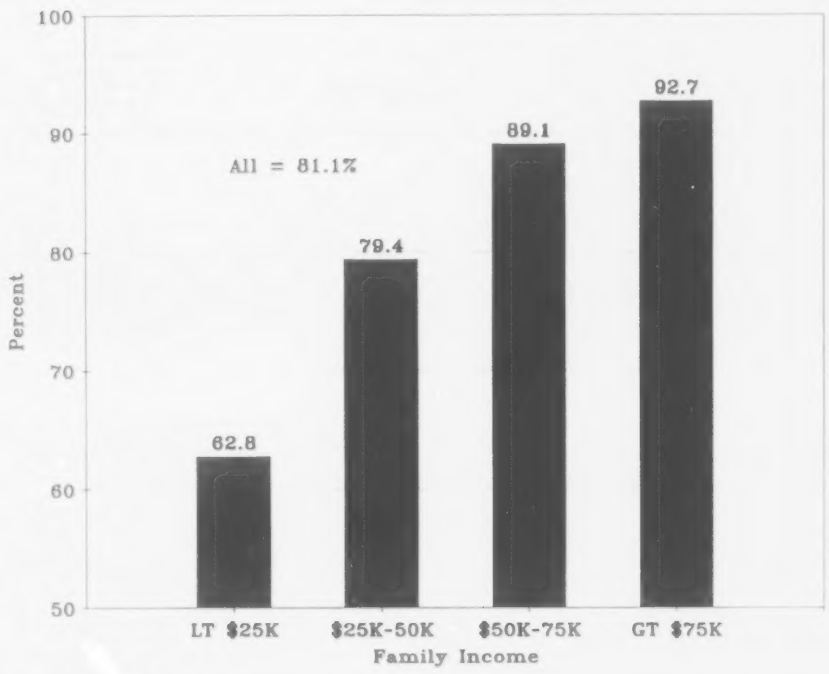
The average college participation rate for dependent 18 to 24 year olds for the five years between 1996 and 2000 was 58.8 percent. Expressed another way, 58.8 percent of this group both graduated from high school and enrolled in college between the ages of 18 and 24 years.

Out of about 12.6 million dependent 18 to 24 year olds on whom family income data were available, 10.2 million were high school graduates and 7.1 million were either enrolled in college or had enrolled in college but were no longer enrolled in college.

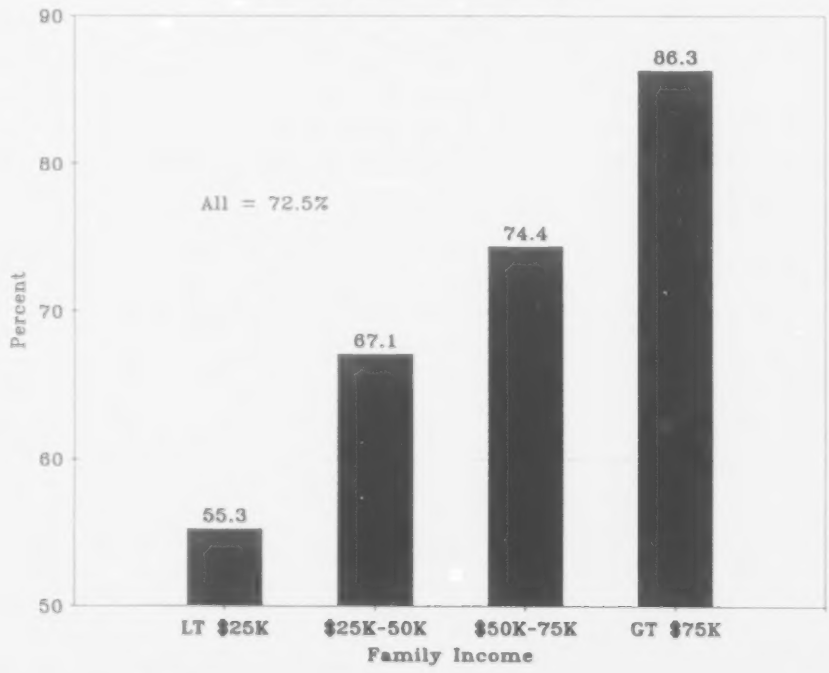
Of greater interest here, however, is the college participation rate by family income. As shown in the chart on page 1 of this issue of OPPORTUNITY, the college participation rate was just 34.7 percent for dependent 18 to 24 year olds from families with incomes below $25,000 per year. The CPR increased with income, to 53.3 percent for those from families with incomes between $25,000 and $50,000, to 66.3 percent for those from families with incomes between $50,000 and $75,000, and to 79.9 percent for those from families with incomes above $75,000 per year. Remember that these college participation rates are averages for the five years between 1996 and 2000.

The college participation rate has two components: first the high school graduation rate, then the college continuation rate for those who graduate from high school. The average high school graduation rate for dependent 18 to 24 year olds for 1996 to 2000 was 81.1 percent. Across family income levels, this rate ranged from 62.8 percent for those from families with incomes of less than $25,000 to 92.7 percent for those from families with incomes above $75,000.

High School Graduation Rates for Dependents 18 to 24 Years by Family Income
Average of 1996 to 2000



College Continuation Rates for Dependent 18 to 24 Year Olds by Family Income
Average of 1996 to 2000



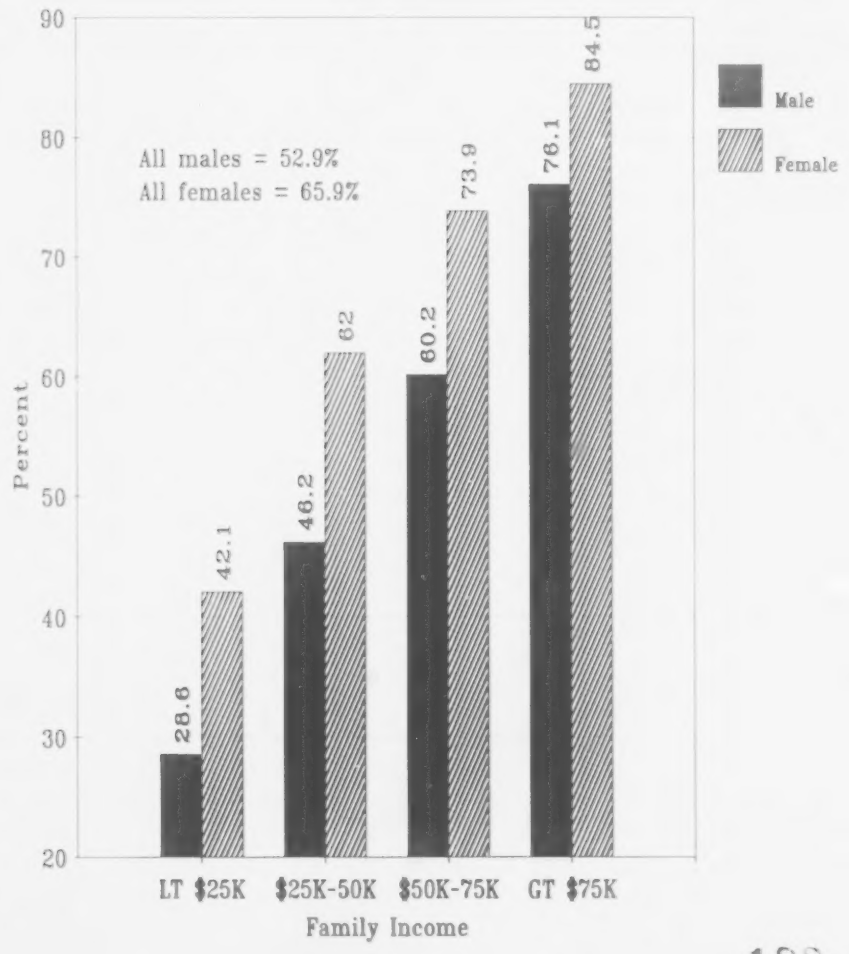
The average college continuation rate for all dependent 18 to 24 year old high school graduates was 72.5 percent for the 1996 to 2000 period. Across family income levels, the rate ranged from a low of 55.3 percent for those from families with incomes below $25,000 to a high of 86.3 percent for those from families with incomes above $75,000.

Family Income and Gender

The preceding charts illustrate the strong relationship between family income and college participation. But many analyses reported in previous issues of OPPORTUNITY have shown that women are now graduating from high school and continuing their educations in college at higher rates than are men. Here we examine college participation by gender, controlling for family income.

The average college participation rate for dependent 18 to 24 year old males for the years 1996 through 2000 was 52.9 percent, compared to 65.9 percent for females. Over the last five years the college participation rate for males has ranged from 54.2 percent in 1996, to 50.4 percent by 2000--clearly trending downward. During this same period, the CPR for females has ranged from 64.3 to 66.8 percent, and is also trending downward over the last five years but not as sharply.

College Participation Rates for Dependent 18 to 24 Year Olds
by Gender and Family Income
Average of 1996 to 2000



For males the college participation rate varies, as expected, with family income. At the lowest family income levels college participation rates are lowest. Below $25,000 family income the college participation rate for dependent 18 to 24 year old males was 28.6 percent. At higher family income levels it rose, to a peak of 76.1 percent for males from families with incomes of more than $75,000.

For females the same pattern holds: college participation rates rise sharply with family income. Below $25,000 family income, the CPR was 42.1 percent, compared to 84.5 percent for females from families with incomes of more than $75,000.

At every income level, the CPRs for females were well above those for males, with the gender gap narrowest at the highest family income level.

The college participation rate again consists of the high school graduation rate and the college continuation rate for those who graduate from high school. The average high school graduation rate for dependent 18 to 24 year old males for 1996 through 2000 was 77.8 percent, compared to 85.2 percent for females.

At every level of family income, the high school graduation rate for females was well above that for males. The greatest difference (11.8 percent) was at the lowest family income level (below $25,000) and the smallest difference (3.6 percent) was at the highest family income (above $75,000).

The college continuation rate measures the proportion of high school

graduates who have continued their educations into college as dependent 18 to 24 year olds. The average college continuation rates for dependent 18 to 24 year old males for the years 1996 through 2000 was 68.1 percent, compared to 77.3 percent for females.

For both men and women, the college continuation rate increases sharply with increasing levels of family income. For males the rate increases from 49.8 to 83.6 percent between the lowest and highest family income intervals. For females the rate increases from 60.8 to 89.3 percent across family income levels.

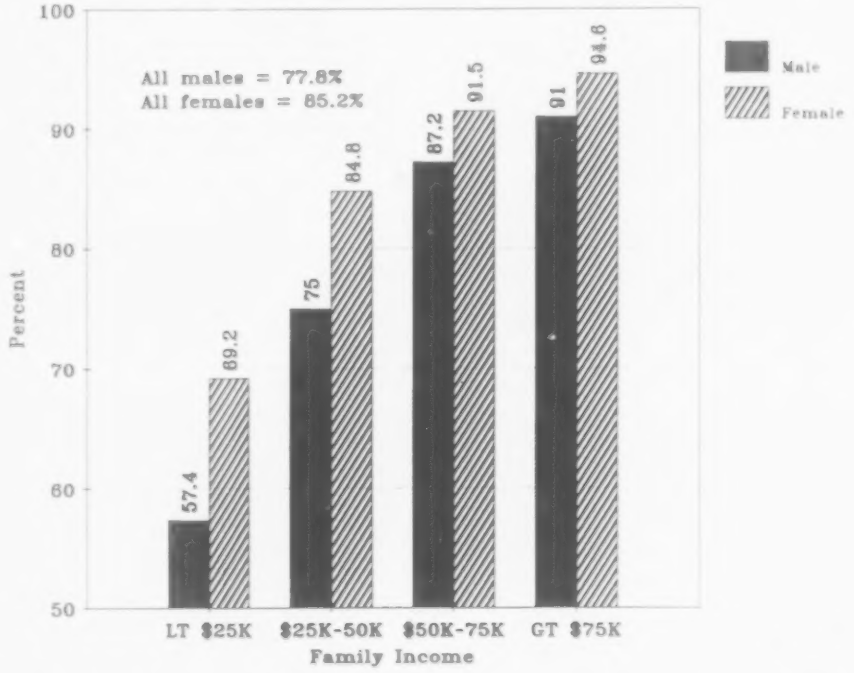
The greater college continuation rates for females compared to males holds at each and every level of family income as well. At family incomes below $25,000, the CCR for females is 11.0 percent greater than the rate for males. Above $75,000 of family income the difference favors women by 5.7 percentage points.

Note that the Census Bureau data from the Current Population Survey are limited to dependent family members between the ages of 18 and 24 years in the civilian noninstitutional population.

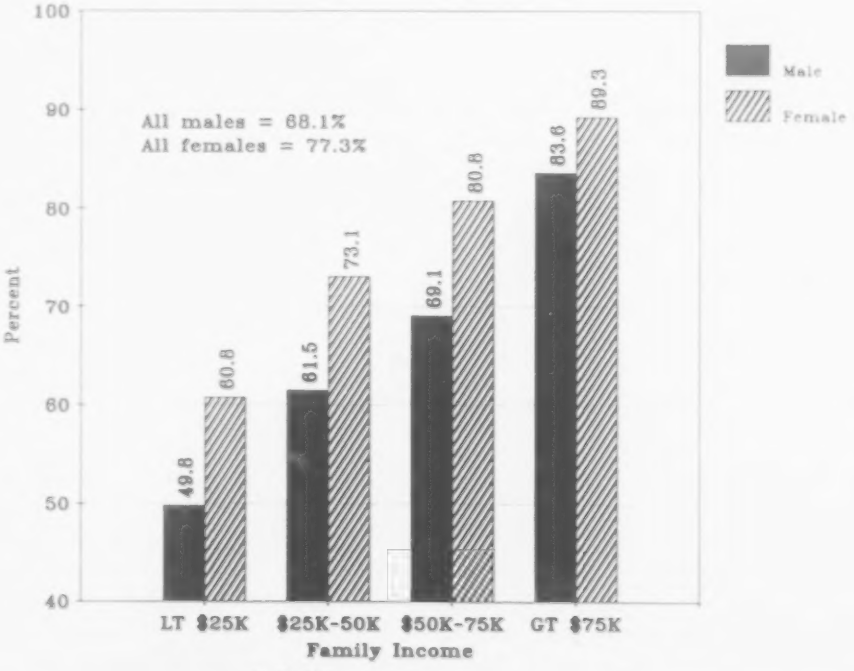
- Women tend to marry and leave the parental family earlier than do men (although young women have been postponing marriage for decades), and those women that remain with their parental families are more likely to be available to attend college than do those who marry and start their families earlier in their lives.
- But the males who are in military service or in the corrections systems are also excluded from the Current Population Survey, and they too are not enrolled in college in this age range either.

Thus, the Current Population Survey appears to reasonably reflect differences in educational progress of young men and women meeting the

High School Graduation Rates for Dependents 18 to 24 Years
by Gender and Family Income
Average of 1996 to 2000



College Continuation Rates for Dependent 18 to 24 Year Olds
by Gender and Family Income
Average of 1996 to 2000



dependent, 18 to 24 year old definitions used in the CPS.

Family Income and Race/Ethnicity

The Census Bureau now reports its population data in three racial and one ethnic categories: white non-Hispanic, black, Asian or Pacific Islander and Hispanic. This categorization includes 99.9 percent of the population of dependent 18 to 24 year olds. The shares were: 63.7 percent for white non-Hispanics, 16.4 percent for blacks, 4.4 percent for Asian/Pacific Islanders and 15.4 percent for Hispanics.

Changes introduced in the last three years reflect both changing population numbers and the increasing challenge to enumerators to group us by the racial/ethnic construct. (We wonder where Tiger Woods is assigned.) The white non-Hispanic and Asian/Pacific Islander reporting categories were added in 1998.

Like gender, racial/ethnic categories show very large variations in educational participation. The average college participation rates for dependent 18 to 24 year olds for 1997 to 2000 were: 64.1 percent for white non-Hispanics, 46.4 percent for blacks, 77.9 percent for Asian/Pacific Islanders and 39.8 percent for Hispanics.

In all racial/ethnic groups, college participation rates increase with increasing levels of family income. But when family income is controlled for, these participation rates begin to differ in interesting ways.

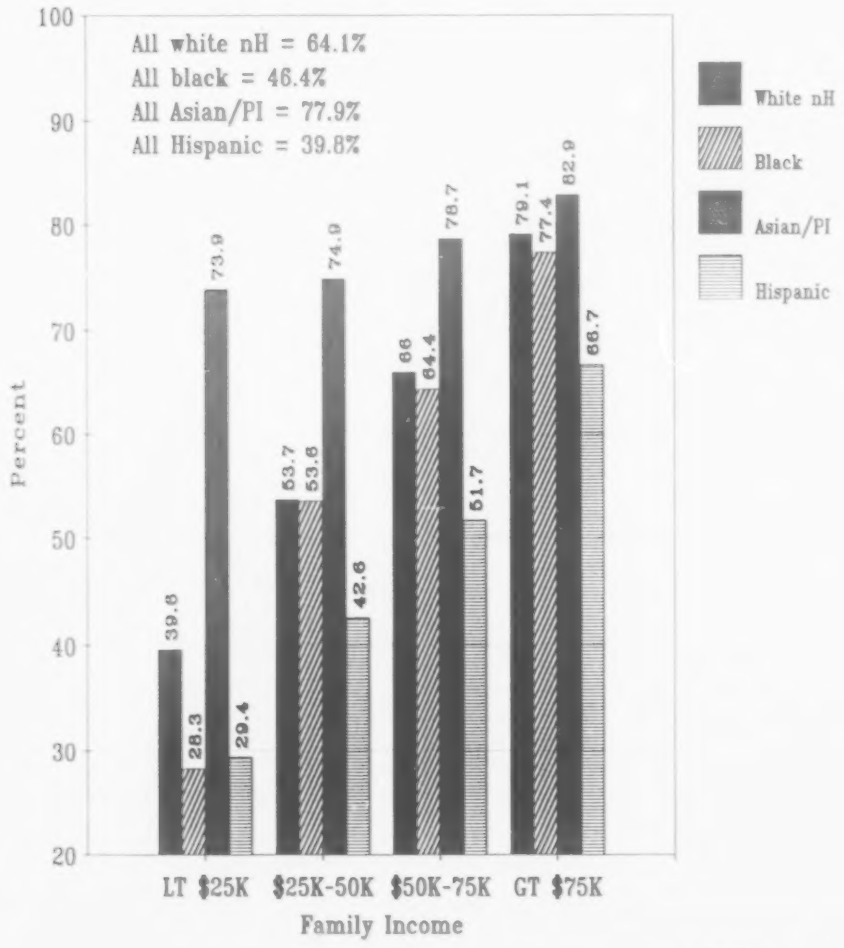
Asian/Pacific Islanders set the bar. At every level of family income their college participation rates are far greater than those of the other three groups. Asian/PIs act almost as if limited family income is no barrier to college participation rates: their rate at the lowest level of family income is close to that of Asian/PIs and all other racial/ethnic groups at the highest level of family income.

For the other three racial/ethnic population groups, college participation rates increase sharply with increasing levels of family income. Among white non-Hispanics, the rate increases from 39.6 to 79.1 percent between the lowest and highest family income intervals. Among blacks it increases from 28.3 to 77.4 percent.

At most levels of family income Hispanic college participation rates are the lowest among these racial/ethnic categories. This is not true at the lowest family income intervals, below $25,000, where blacks have a slightly lower rate. But at family income levels above $25,000, Hispanics lag the other three groups by more than 10 percentage points.

College participation here is disaggregated into high school graduation and college continuation behaviors to better understand where the hemorrhaging in the education pipeline is occurring.

College Participation Rates for Dependent 18 to 24 Year Olds by Race/Ethnicity and Family Income
Average of 1997 to 2000



Among dependent 18 to 24 year olds, average high school graduation rates for 1997 to 2000 were 85.9 percent for white non-Hispanics, 73.3 percent for blacks, 88.2 percent for Asian/PIs and 64.9 percent for Hispanics. (These numbers are based on the Census Bureau's liberal definition of a high school graduate, which includes alternative forms of high school certification such as the GED.)

Generally, high school graduation rates increased with income in each group. Across the family income ranges used here, the increase was greatest among blacks and Hispanics, and least among Asians. But note that the high school graduation rate for Asians/PIs in the highest family income range is below that for Asians/PIs in the two middle ranges of family income.

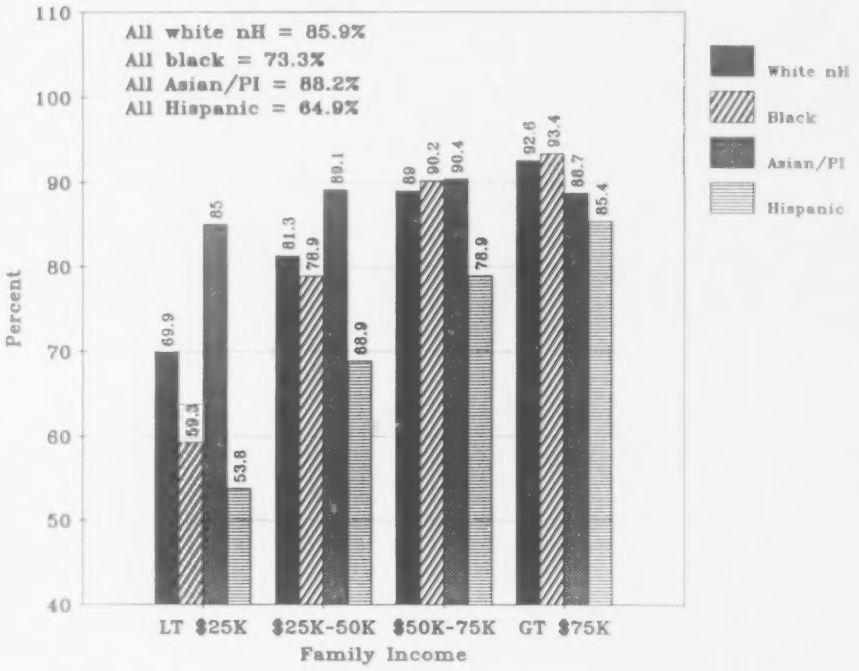
The college continuation rates for those who graduated from high school were 74.7 percent for white non-Hispanics, 63.3 percent for blacks, 88.3 percent for Asians/Pacific Islanders and 61.2 percent for Hispanics. The rank order among these four groups was identical to that for high school graduation rates.

College continuation rates rose with family income for whites, blacks and Hispanics. Between the lowest and highest family income ranges, CCRs increased by 28.7 percent for white non-Hispanics, 35.5 percent for blacks and 23.5 percent for Hispanics. These rates also rose for Asian/PIs, but by just 6.5 percent. And for this group the CCRs were largely flat (and relatively very high compared to the other groups) except in the highest family income range.

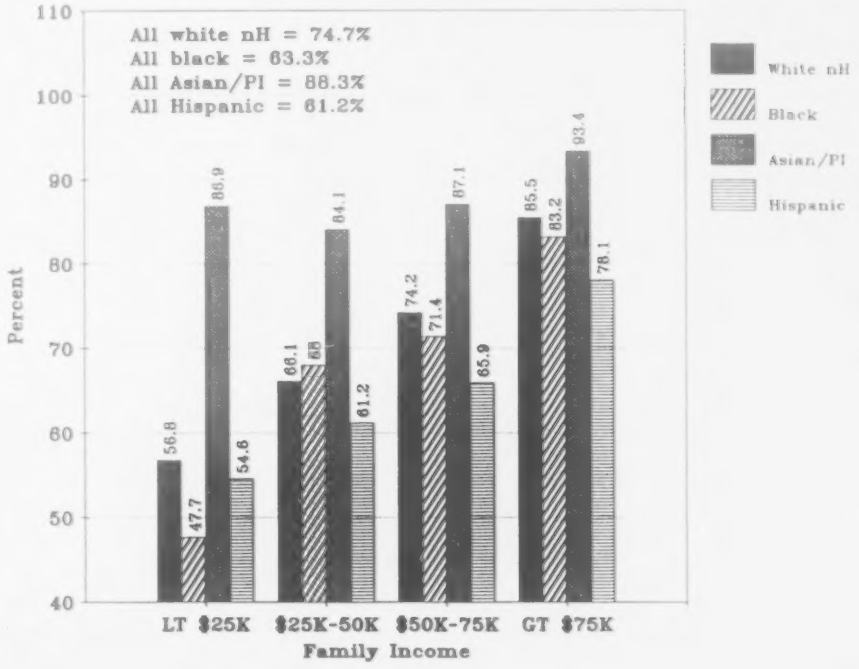
Family Income Distribution

The importance of breaking down college participation, high school graduation and college continuation rates by family income levels should

High School Graduation Rates for Dependents 18 to 24 Years by Race/Ethnicity and Family Income Average of 1997 to 2000



College Continuation Rates for Dependent 18 to 24 Year Olds by Race/Ethnicity and Family Income Average of 1997 to 2000



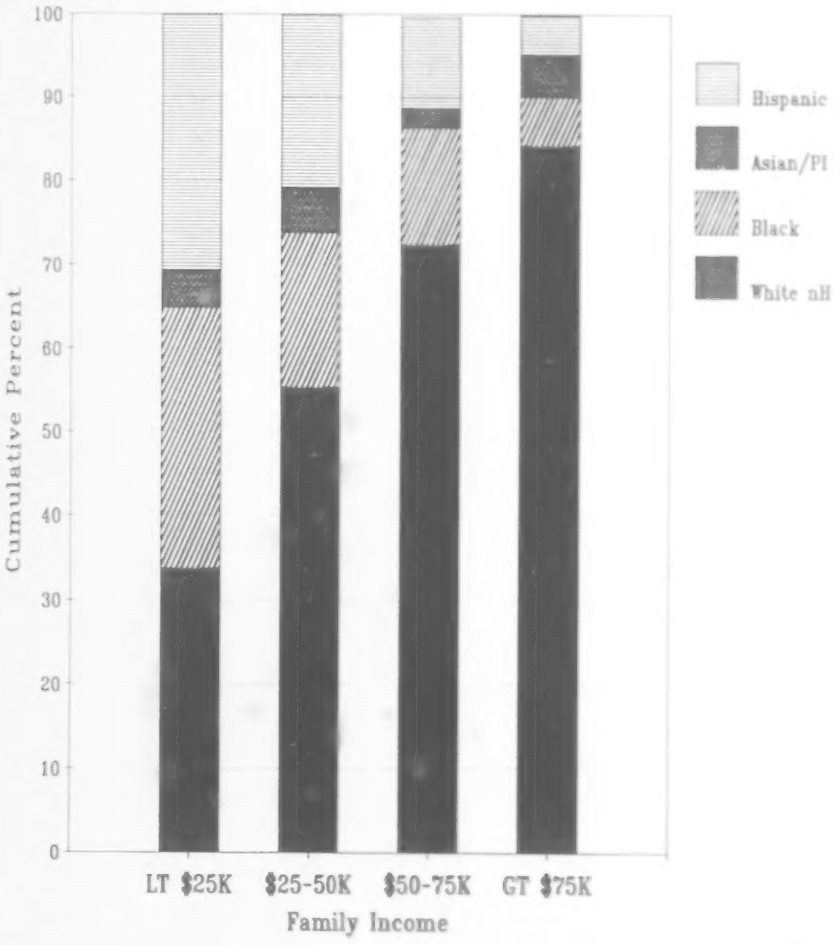
be apparent by now. The large group differences in these rates are reduced when income is controlled. This means that differences in family income alone account for much of (but not all) of the group differences.

These differences in family income across groups are important because family income is the basis for all federal Title IV student financial aid and outreach programs, all state and institutional need-based student financial aid programs, and much institutionally awarded financial aid. Aid in this form is targeted on those who "need" it, and need is determined by inadequate family income to finance college attendance costs.

Explicitly, income-tested financial aid and outreach programs are targeted on students from low and moderate family income backgrounds. Implicitly, these programs serve minorities disproportionately because minorities are disproportionately low income. For examples:

- Below $25,000 of family income in 2000, 33.7 percent of the dependent 18 to 24 year olds are white non-Hispanic, 31.2 percent are black, 30.6 percent Hispanic and 4.4 percent are Asian/PI.
- Above $75,000 of family income, 84.1 percent of the dependent 18 to 24 year olds are white non-Hispanic, 6.0 percent are black, 5.0 percent area Asian/PI and 4.8 percent are Hispanic.

Distribution of Dependent 18 to 24 Year Olds by Family Income and Race/Ethnicity 2000



Thus, the targeting of financial aid to students from different family income levels has clear significance for the racial/ethnic mix of the beneficiaries.

- In the 1960s and 1970s most federal and state student financial aid programs were clearly income-targeted on students from low family income backgrounds. Thus the students served by these programs were largely minorities.
- In 1978 with passage of the federal Middle Income Student Assistance Act, the focus of student financial aid eligibility began moving up the income scale to include more middle income students.
- In the 1990s all pretense of serving needy students was set aside so that financial aid could be provided to students from high income families. This is most clearly expressed in state merit-based scholarship programs with no need-test or income cap on eligibility, federal Hope and Lifetime Learning tax credits that exclude people too poor to pay federal income taxes, tax-favored college savings and pre-paid tuition programs for families with discretionary income to set aside for future higher education purchases, and institutionally/ student-tuition funded merit scholarships that have no need test or income cap.

Not only are financial aid benefits being shifted away from those who need them to those who don't, but these resources are being shifted toward the shrinking share of the population and away from the growing shares that are our country's future.

Individual Economic Welfare in the Human Capital Economy 1973 to 2000

Americans want to live well. Our individual utility functions are to maximize our private welfare. Each person defines what they want from life for themselves, but a major component of that definition is typically in terms of economic measures.

Four-year college freshmen report what objectives they consider to be important in *The American Freshman: National Norms for Fall 2000*. The proportion of freshmen citing each objective to be essential or very important to their lives was:

Be very well off financially	73.4%
Raising a family	73.1%
Helping others in difficulty	61.7%
Become authority in my field	59.7%
Recognition from colleagues	51.2%
Integrate spirituality into life	45.1%
Develop philosophy of life	42.4%
Be successful businessman	39.3%
Influence social values	37.6%
Supervise work of others	36.9%
Become community leader	30.9%
Promote racial understanding	30.8%

When asked what their reasons for attending college were, the proportion citing very important were:

Learn more about things	76.6%
Get training for specific career	71.8%
To be able to get a better job	71.6%
To make more money	70.0%
Gain general education	64.5%
Prepare for graduate school	56.9%

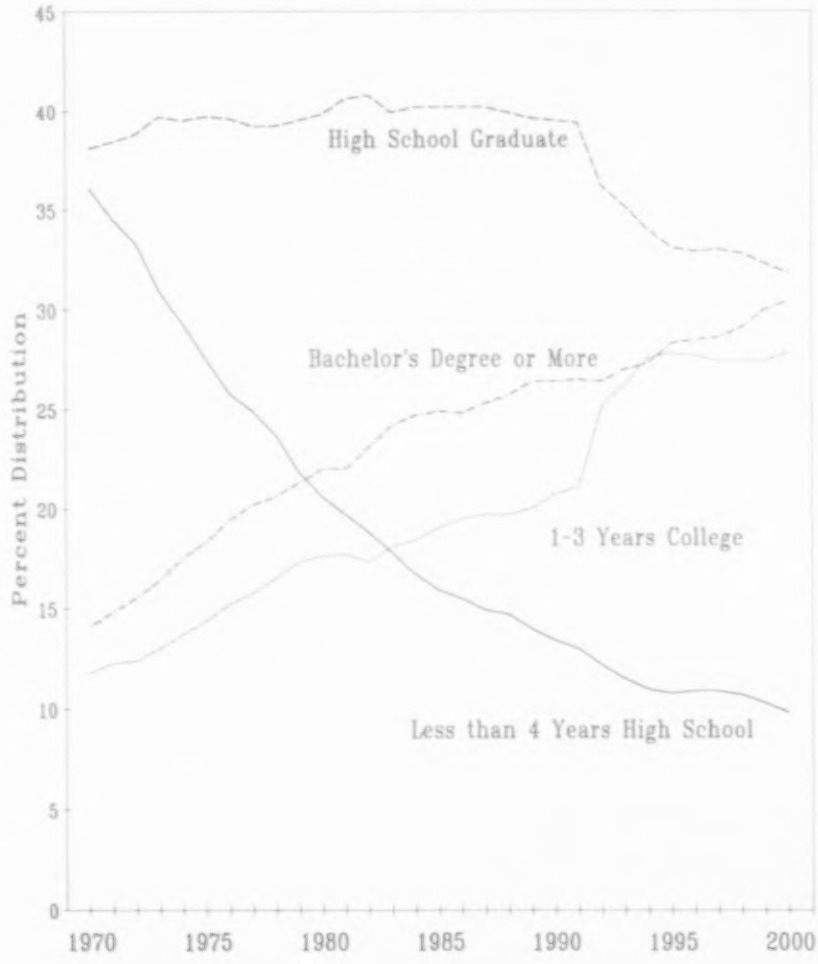
Clearly, the economic value of a college education ranks high on the priorities of freshmen attending four-year colleges and universities.

The Human Capital Economy

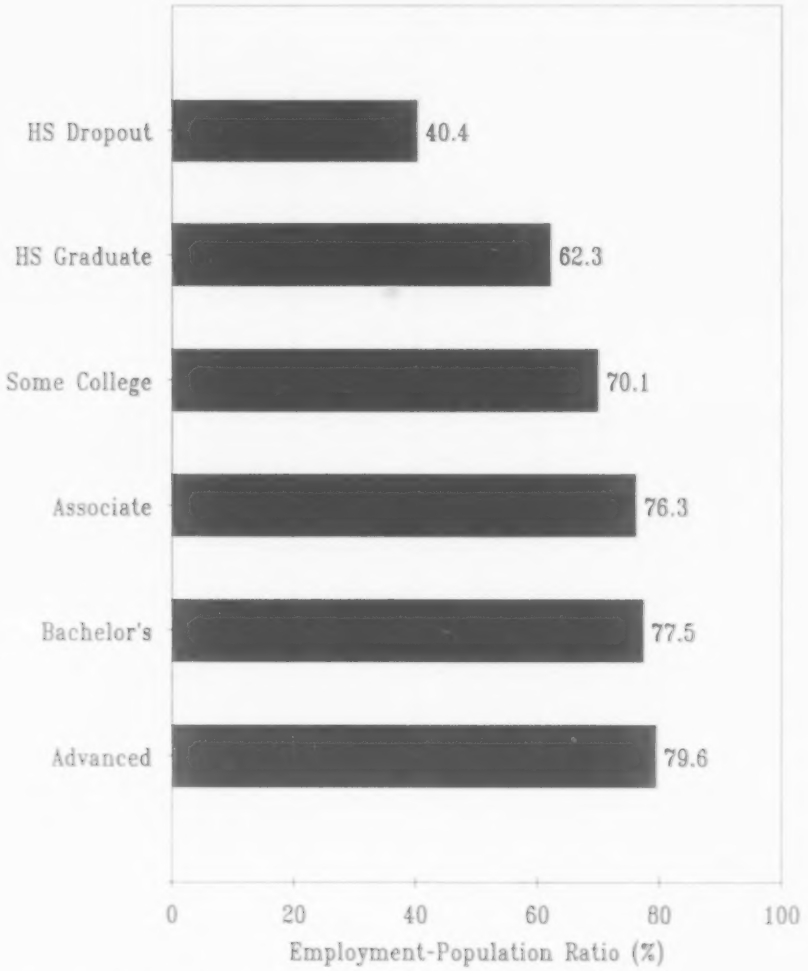
Since about 1973, private economic welfare has been increasingly determined simply by educational attainment. People with more education have improved their incomes and living standards in this Human Capital Economy (HCE). People with less education have lost real income and living standards. In effect higher educational attainment has become the clear dividing line between those whose welfare is advancing and others whose welfare is deteriorating since about 1973.

The above holds for individuals. But it is also true for households and families, for cities and for states. Where higher education is concentrated among adults, there is greater prosperity than there is in populations where higher education is scarce.

Civilian Labor Force by Educational Attainment
1970 to 2000



Employment-Population Ratios by Educational Attainment
2000



Here we review three commonly used measures of individual economic welfare--income, poverty and unemployment--with respect to educational attainment. In particular and where time-series data are available, we do so for at least the last three decades. The results of these analyses describe the changing economic fortunes of adults with different levels of educational attainment during the evolution of the Human Capital Economy.

What these analyses show is that higher education is more important to the economic welfare of individuals than it has been at any time in the last half century.

The Data

All of the data used in these analyses were collected by the Census Bureau in the Current Population Survey. The data were reported, however, by both the Census Bureau and the Bureau of Labor Statistics.

The Current Population Survey is a monthly survey of a national sample of about 50,000 households in the U.S. The primary purpose of the CPS is to gather data on employment and unemployment of the civilian, noninstitutional population. Periodic supplements to the CPS gather additional data on education, income and other characteristics of the population important to Census data users. Note that military and institutional (e.g. corrections) populations are not included in the CPS.

Our analysis of CPS data is limited to the population age 25 and over. The income and poverty data include all people age 25 and over, while the data on the labor force and unemployment are limited to the population between the ages of 25 and 64 years.

The data on income and poverty by educational attainment were reported by the Census Bureau in several Current Population Reports in the P60 series on income and poverty, which are available on the Census Bureau's website at:
http://www.census.gov
The income data is on the Income page, and the poverty data also has its own page.

The data on the labor force, employment and unemployment by educational attainment were provided by Sharon Cohany of the Bureau of Labor Statistics. These data have been compiled since at least 1970, but are unpublished. These data are compiled for internal use but are available on request.

Labor Force

In March of 2000 there were 114,052,000 people between the ages of 25 and 64 years in the civilian labor force of the United States. The labor force has grown from 61.8 million in 1970, to 78.0 million by 1980, to 99.2 million by 1990. Between 1970 and 2000, the female labor force increased by 22,853,000, or by 102 percent.

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During this same period the male labor force increased by 15,862,000, or by about 40 percent.

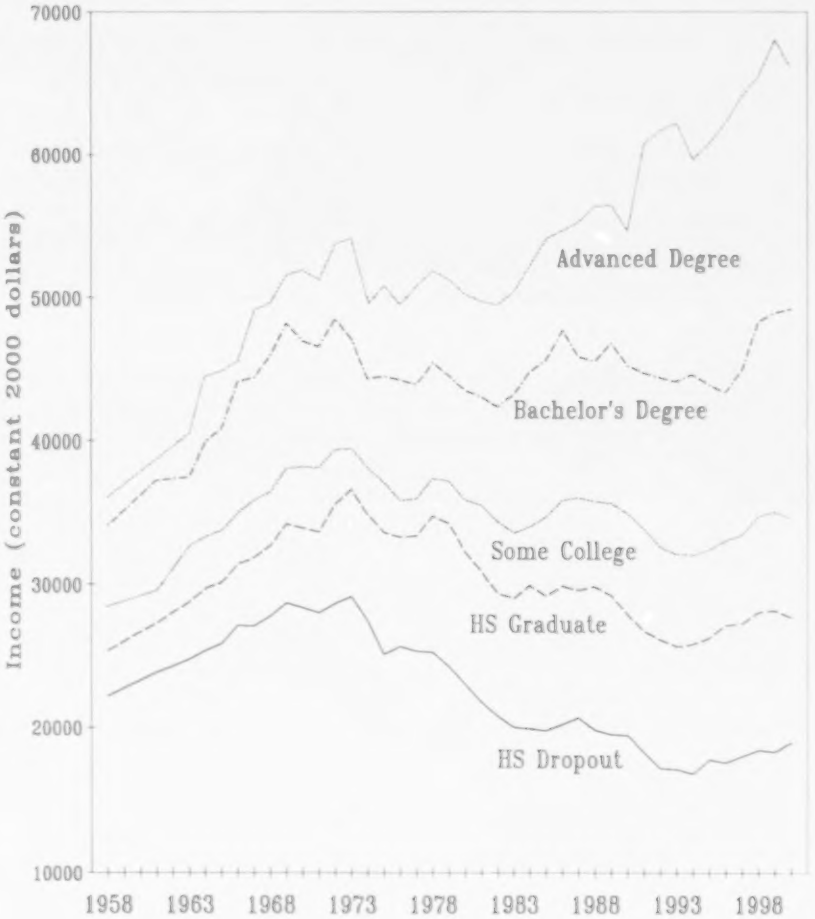
In March of 2000, 9.8 percent of the total had less than a high school diploma (or GED), 31.8 percent had a high school diploma but no college, 27.9 percent had some college or an associate degree, and 30.4 percent held a bachelor's degree or more.

- For males the distribution was 11.1 percent with less than a high school diploma, 31.8 percent high school diploma only, 26.1 percent some college and 30.9 percent with a bachelor's degree or more from college.
- For females the distribution was 8.4 percent less than a high school diploma, 31.8 percent high school diploma only, 30.0 percent some college, and 29.8 percent had a bachelor's degree or more.

Between 1970 and 2000 there has been an enormous increase in the educational attainment of the civilian labor force. These data are shown in the chart on page 9.

- The share of the labor force with less than a high school diploma has declined from 36.1 to 9.8 percent of the total. The actual number shrank from 22.3 to 11.2 million during the last 30 years.
- The share of the labor force with only a high school diploma (or GED) has shrunk from 38.1 to 31.8 percent since 1970. This share peaked at 40.8 percent in 1982, and generally held close to 40 percent up until 1991. The decline really begins about 1992 and runs through 2000. Between 1970 and 1991, the number of people in the workforce with only a high school diploma increased from 25.5 to a peak of 39.6 million, and since 1991 has declined to 36.3 million.
- The share of the labor force with some college or an associate degree (but less than a bachelor's degree, increased from 11.8 percent in 1970 to 27.9 percent by 2000. The number increased from 7.3 to 31.8 million during this period.
- The share of the labor force with a bachelor's degree or more increased from 14.1 percent in 1970 to 30.4 percent by 2000. The number of people increased from 8.7 to 34.7 million during this same period.

Median Annual Income by Educational Attainment for Males 25 Years and Over 1958 to 2000



Employment-Population Ratios

The employment-population ratio is the proportion of the U.S. population age 25 and over that is currently employed. In 2000 this was 65.4 percent, up from 62.4 percent in 1992.

This ratio increases with educational attainment, as shown in the chart on page 10. Just 40 percent of those who have not completed high school are employed, compared to 78.2 percent for those with a bachelor's degree or more from college.

The employment-population ratio increases with educational attainment

for both men and women, and for all major racial/ethnic groups. In 2000:

- For men the E-P ratio increased from 72.5 percent for high school graduates to 83.1 percent for college graduates.
- For women the ratio increased from 53.8 to 72.9 percent.
- For whites the ratio increased from 61.9 to 77.9 percent.
- For blacks the ratio increased from 65.4 to 82.3 percent.
- For Hispanics the ratio increased from 71.1 to 81.1 percent.

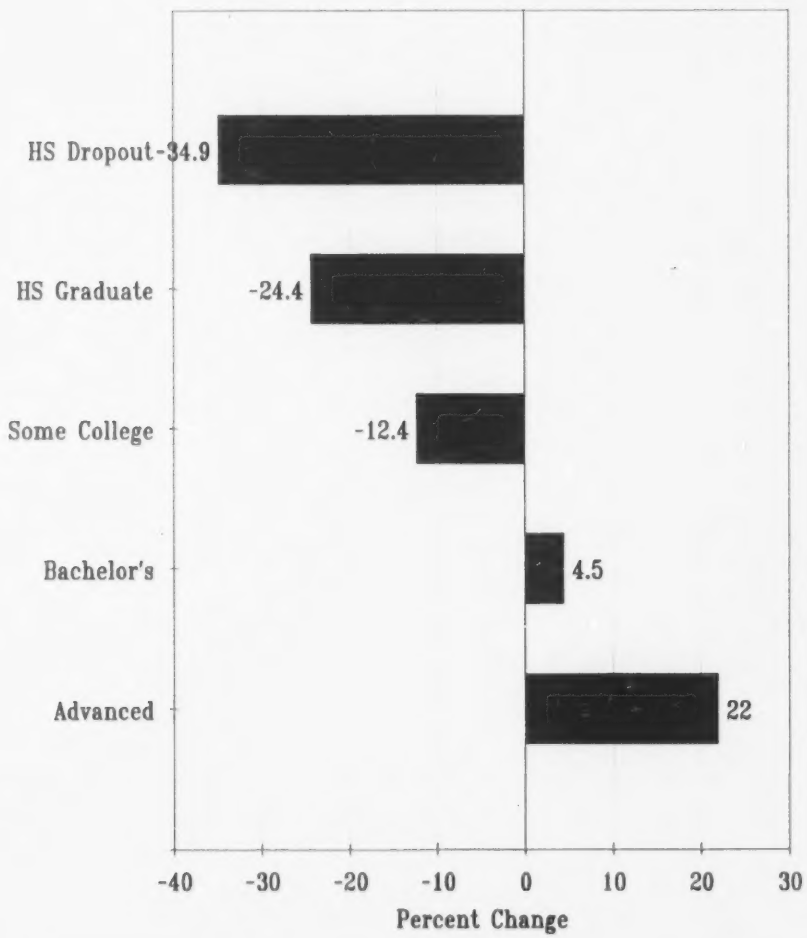
Income

Through employment we exchange our labor for money. Earnings from employment are a major part of the income we receive to live on and that defines our living standards, but earnings are not our only source of income. The Census Bureau defines income as all money flowing to an individual, including:

- Earnings from longest job held (or self-employment)
- Earnings from jobs other than longest job
- Unemployment compensation
- Workers' compensation
- Social Security
- Supplemental Security Income
- Public assistance
- Veterans' payments
- Survivor benefits
- Disability benefits
- Pension or retirement income
- Interest
- Dividends
- Rents, royalties, and estates and trusts
- Educational assistance
- Alimony
- Child support
- Financial assistance from outside of the household, and other periodic income

Capital gains and lump-sum or one-time payments are excluded.

Change in Median Annual Income by Educational Attainment for Males 25 and Over 1973 to 2000



Males. Median annual income for males 25 and over according to their educational attainment is shown in the chart on page 11. This chart, plus the chart on page 12, illustrate the advent of the Human Capital Economy about 1973.

Here median annual income is, and always has been, strongly influenced by educational attainment. Men with more education have higher median incomes than do men with less education. This has been true since at least 1958, and almost certainly has always been true. More education empowers men to do more valuable work for which the market determines their rewards.

But far more important than this simple and clear relationship between educational attainment and income are the changes in median income at different levels of educational attainment, particularly since about 1973. Those with bachelor's degrees or more from college have seen real (inflation adjusted) income increases, while men with lower levels of education have seen real income declines since 1973.

And these declines are not small. Males age 25 and over with just a high school diploma have lost nearly a quarter of their incomes. This quarter comes entirely out of the discretionary income above what is required to meet survival needs. This lost discretionary income comes entirely out of quality-of-life purchases of goods and services that enrich our existence. Losing this discretionary income leaves the lives of less well educated males leaner and meaner.

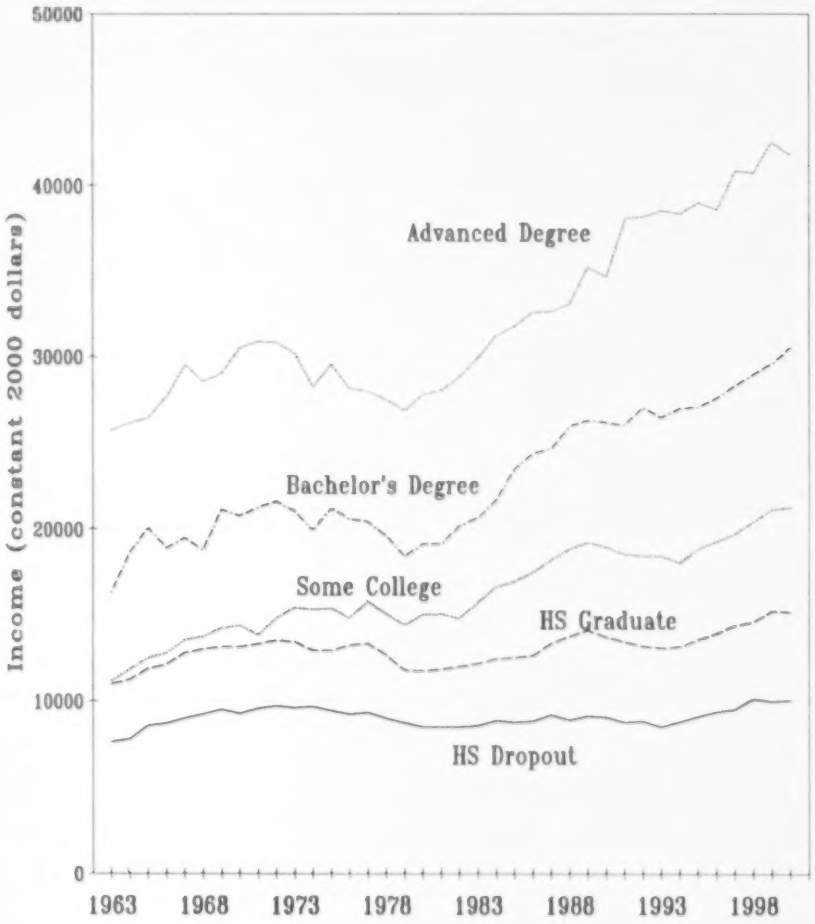
The median incomes for males at all education levels below the bachelor's degree have declined since 1973. In the Human Capital Economy, males with these levels of education appear to be overvalued and in over supply relative to the labor market's need for their skill levels.

However, at the bachelor's degree and above, real incomes for males have increased, especially for those with post-baccalaureate degrees. Here the labor market has increased value, and measured through the demand-supply filter, there appears to be a relative shortage of males at the highest levels of educational attainment.

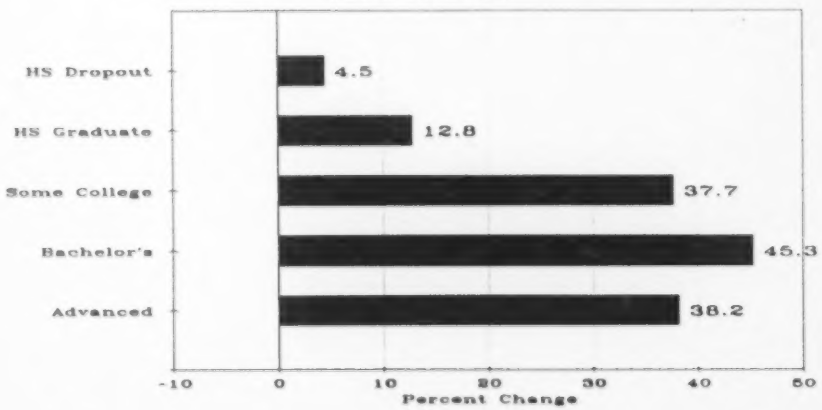
Females. Somewhat different patterns and trends emerge from our analyses of the income data for females. Here the strong relationship between median income and educational attainment still holds. Women age 25 and over with more education have consistently received more income than have women with less formal education.

However, women's incomes at all levels of educational attainment have increased in real terms between 1973 and 2000. The increases have been smallest for women with high school educations or less. But they have been relatively very large for women with at least some college education, larger than gains for college educated men. The gains have been largest for women with bachelor's degrees.

Median Annual Income by Educational Attainment for Females 25 Years and Over 1963 to 2000



Change in Median Annual Income by Educational Attainment for Females 25 and Over 1973 to 2000



But even among women, the income gains have gone to those with the most education--like men. This is the Human Capital Economy for women. The greatest rewards for labor go to the best educated.

Unemployment

In 2000, unemployment rates were strongly related to educational attainment in the civilian labor force. The overall unemployment rate was 3.3 percent, the lowest it had been since 1970. But by levels of educational attainment, the unemployment rate varied as follows:

High school dropout	7.9%
High school graduate	3.8%
Some college/associate degree	3.0%
Bachelor's degree or more	1.5%

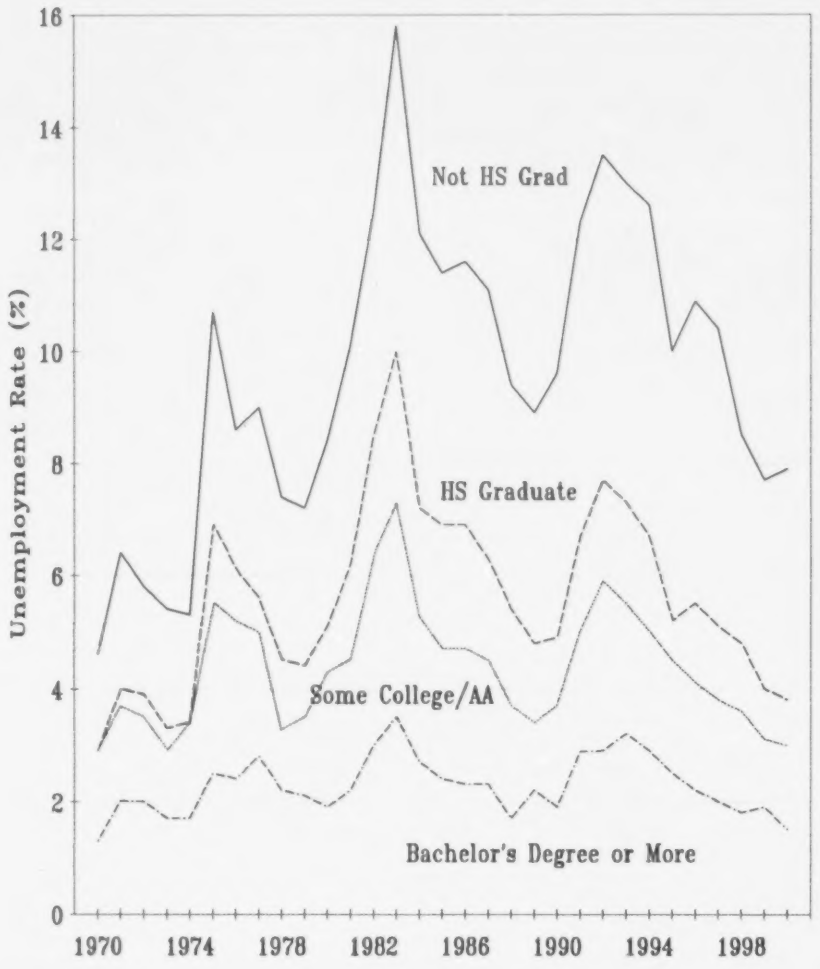
Over the last three decades, unemployment rates have consistently held this relationship to educational attainment. But these rates fluctuate with the business cycle: in economic recession unemployment rates increase as businesses layoff employees, while in economic expansion employers add employees and unemployment rates go down.

This pattern of hiring and laying off employees during the expansion and recession phases of the business cycle has its greatest impact on those with the least education, and has the least effect on those with the most formal education. The National Bureau of Economic Research defines the recessionary phases of the business cycle since 1970 as follows:

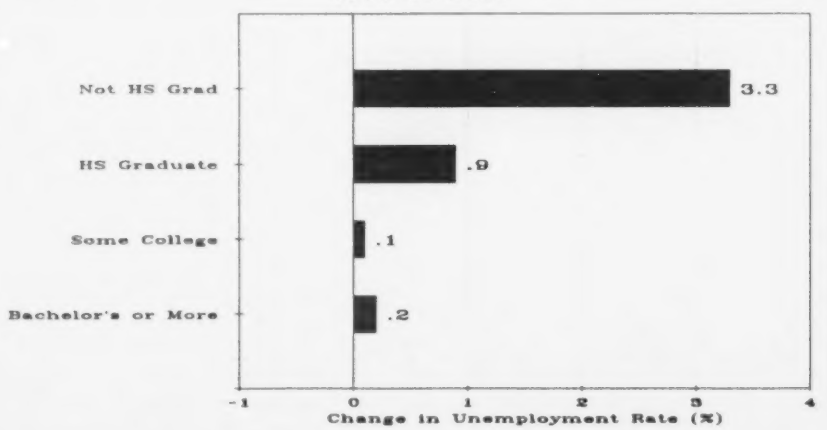
- December 1969 to November 1970
- November 1973 to March 1975
- January 1980 to July 1980
- July 1981 to November 1982
- July 1990 to March 1991
- March 2001 to ?

Using annual averages, we have calculated the average increase in unemployment rates for the last four complete recessions since 1970

Unemployment Rates by Educational Attainment
1970 to 2000



Change in Unemployment Rates by Educational Attainment
1970 to 2000



according to educational attainment. For those who had not completed high school, the average increase in the unemployment rate was 4.9 percent, compared to 3.5 percent for high school graduates, 2.4 percent for those with some college, and 0.9 percent for those with a bachelor's degree or more. Clearly, those with the least education suffer most of the job loss during a recession, while those with the most education suffer the least.

Furthermore, over the 30 years between 1970 and 2000, unemployment rates have grown most noticeably among those with the least education, while the increase has been barely perceptible among people with at least some college, as shown in the chart on the bottom of page 14.

Poverty

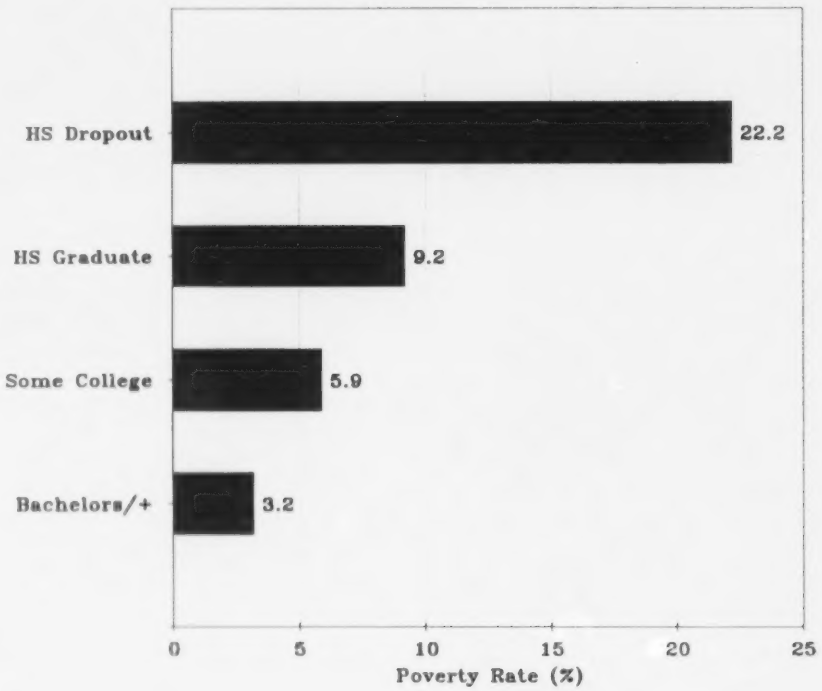
The Census Bureau compiles and reports information on poverty in the United States. Occasionally, these data are tabulated and reported by educational attainment, although we could only find these data published for 2000, 1992 and 1989.

What the available data do tell, however, is the message the BLS data on employment and unemployment by educational attainment say clearly: poverty rates are strongly negatively related to educational attainment. Those adults with the most education have the lowest poverty rates, while those with the least education have the highest poverty rates. In 2000, for those age 25 and over, the poverty rates were:

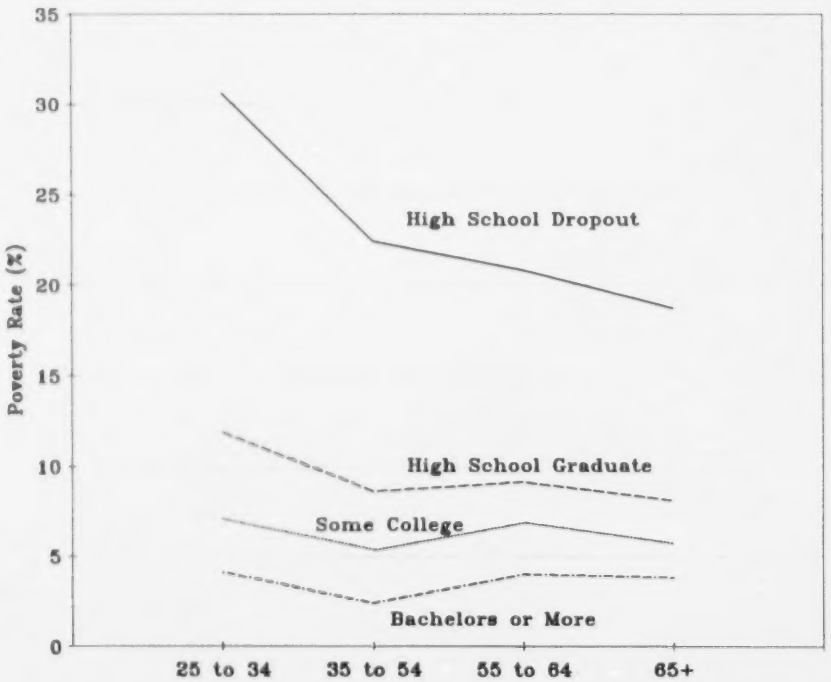
High school dropout	22.2%
High school graduate	9.2%
Some college	5.9%
Bachelor's degree or more	3.2%

While poverty rates tend to decline somewhat with age, the relationship to educational attainment holds at all ages. As shown in the second chart on this page, poverty rates decline the

Poverty Rates by Educational Attainment
2000



Poverty Rates by Educational Attainment and Age
2000



most with age among those with the least education. But even among those age 65 and over, the poverty rate for the least educated is four times greater than the poverty rate for those with bachelor's degrees or more.

Conclusions

These analyses have examined three measures of economic welfare of people age 25 and over compared to their educational attainment. Not surprisingly, each analysis finds that adults with more education are substantially better off economically than are adults with less education. Moreover, during the last three decades the relationship between income/employment and educational attainment has strengthened.

This is the era of the Human Capital Economy. Economic change from goods production to delivery of services in the private sector is making fundamental changes in the nature of employment and living standards for individuals. Those who get education beyond high school are succeeding while others with high school educations or less are falling ever farther behind.

During the last 30 years the educational attainment of the civilian labor force has improved enormously. The proportion of the labor force with a high school education or less has declined by 32.6 percent, while the proportion with some college or more has increased by the same amount.

Despite this improvement in the educational attainment of the labor force, basic indicators of demand and supply indicate that the needs for college educated workers grew faster than the supply since 1970. And the need for workers with high school educations or less grew less than the supply of workers with these skills.

In part this growing imbalance between the demand and supply of workers with different levels of education is the natural result of the time it takes--40 years--to completely turn over the labor force. The required upgrading of educational attainment occurs more slowly than the growth of needs for better educated workers. But in part the growing imbalance also reflects the failure of political leadership, particularly governors and legislators, to make adequate and appropriate state investments in higher education to increase the production of college graduates. We will write more about that in next month's issue of OPPORTUNITY.

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